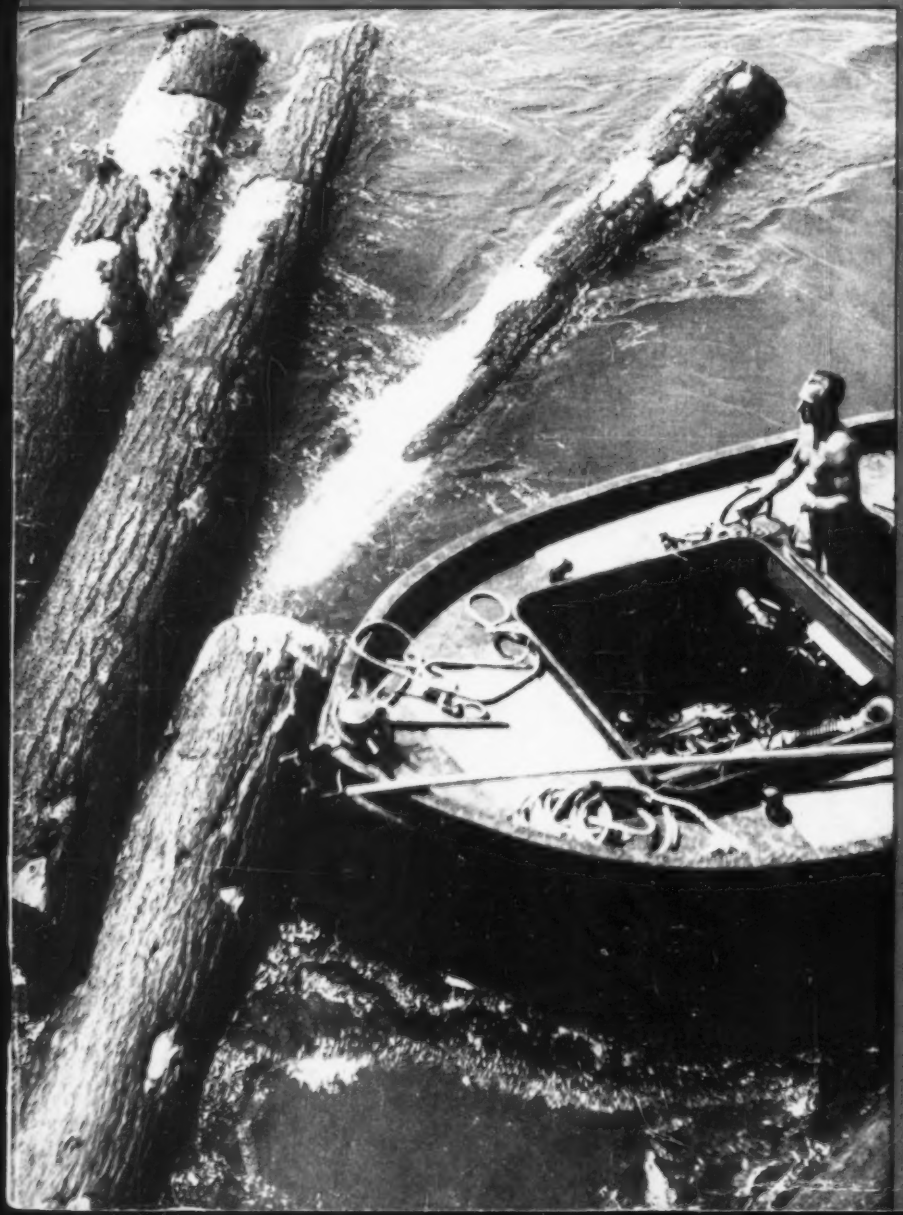
AUG 27 1951

WOOD

Combined With

WOOD PRODUCTS

August, 1951



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As head of one of the country's leading waste-free forest products manufacturing operations, we salute John Weyerhaeuser, Jr.

A hundred "horses" hitched to a sixteen by eight foot package of Douglas Fir. See page 29

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We can no longer afford the luxury of fire-waste. See why on page 25.

ANOTHER NEW FEATURE

See page 77 for a new Barrel and Box and Packaging Section.

SEE THESE FEATURES

- Wanted—Seasoning Specialists
- Southern Pine Mill
- Out in the Shop
- Foreign Woods

A Vance Publication

The National Management and News Magazine of the Forest Products Industry.

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For High Production Low-Cost Sawing

Investigate the Whitney No. 177 Variety Saw's ease of operation, accuracy, versatility, and capacity for large production. It will handle your long runs and straight production sawing with ease and at lowest cost.

The adaptability and quick set-up features of the No. 177 also make it the ideal saw for the wide variety of sawing required in the average woodworking shop. Whitney accuracy and precision workmanship assure life-long dependability, trouble-free service and lowest cost sawing. For complete information write for bulletin M8.

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- Rips up to 29½" wide
- Dado heads up to 3" wide
- 2 Quick-setting, easy-reading Cut-off Gages
- 5-position Rip Gage with micro adjustment at each position
- Graduated Rip Scale — built into table

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WINCHENDON, MASSACHUSETTS, U. S. A.

AUG 27 1951

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For trucks that are *right* on the job—*always* on the job—see these new Chevrolet trucks. They're able to carry the loads you handle, and able to *keep on* carrying them through tough job after tough job. They're economical and easy to handle, too . . . loaded with new features that pay off for you on *every* job. Features like the new self-energizing brakes for more *stopping* power. And like Chevrolet's Dual-Shoe parking brake . . . engineered for greater *holding* power. Here are trucks that offer important new comfort features. Ventipanes for controlled ventilation, and new cab seats for more riding comfort. In every way, these Chevrolet trucks are right for your job. See them at your Chevrolet dealer's now.

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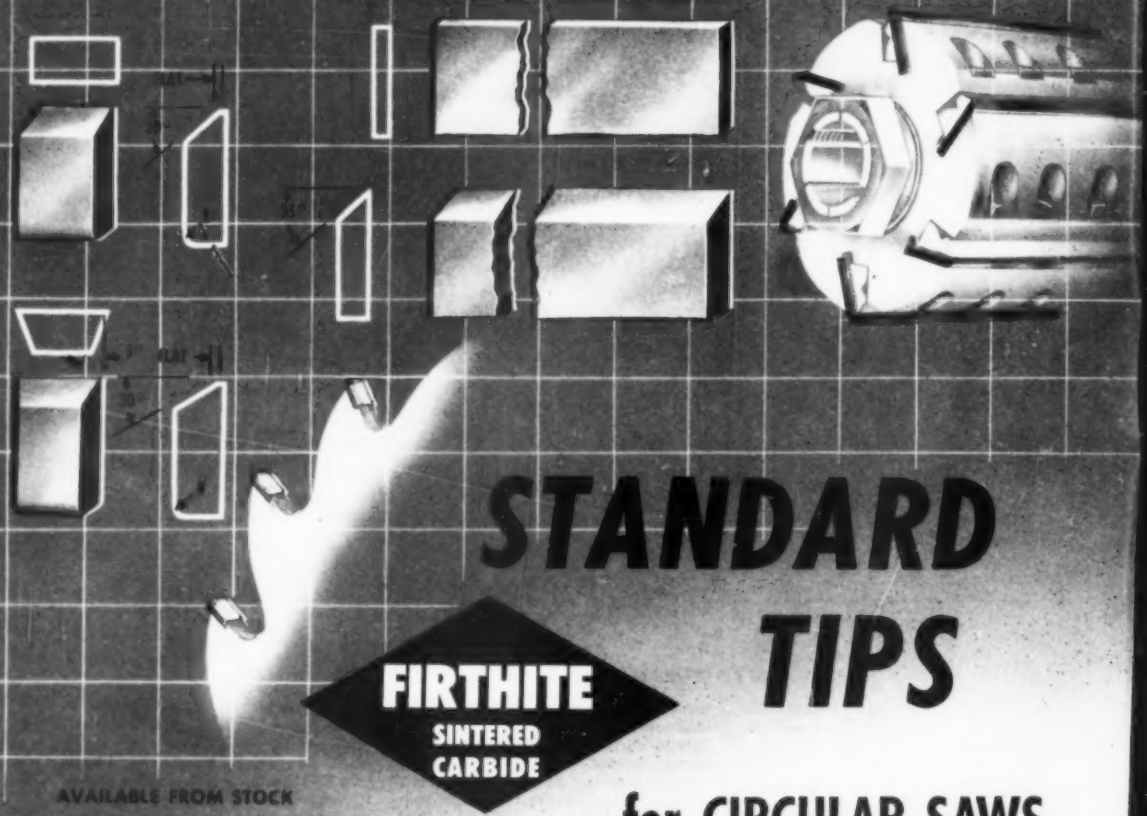
TWO GREAT VALVE-IN-HEAD ENGINES—the 105-h.p. Loadmaster or the 92-h.p. Thriftmaster—to give you greater power per gallon, lower cost per load • **POWER-JET CARBURETOR** — for smooth, quick acceleration response • **DIAPHRAGM SPRING CLUTCH**—for easy-action engagement • **SYNCHRO-MESH TRANSMISSIONS**—for fast, smooth shifting • **HYPOID REAR AXLES**—for dependability and long life • **NEW TORQUE-ACTION BRAKES**—for light-duty models • **PROVED DEPENDABLE DOUBLE-ARTICULATED BRAKES**—for medium-duty models • **NEW TWIN-ACTION REAR BRAKES**—for heavy-duty models • **NEW DUAL-SHOE PARKING BRAKE**—for greater holding ability on heavy-duty models • **NEW CAB SEATS**—for complete riding comfort • **NEW VENTIPANES**—for improved cab ventilation • **WIDE-BASE WHEELS**—for increased tire mileage • **BALL-TYPE STEERING**—for easier handling • **UNIT-DESIGN BODIES**—for greater load protection • **ADVANCE-DESIGN STYLING**—for increased comfort and modern appearance.



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88 Standard Sizes of Saw Tips, in 2 Styles

Available in 3 Firthite grades for: heavy duty ripping or cut-off work in the rough mill; finish cross-cutting, ripping and panel sizing; cutting insulation board, hard board, fibres, plastics and impregnated laminated plywood.

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WOOD

COMBINED WITH

WOOD PRODUCTS

Volume 56 No. 8

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Understand Rita is asking $3,000,000 for support of little daughter Yasmin. At those prices she must be feeding the kid meat.

• • •

Simple Celia says gentlemen prefer blonds because blonds know what gentlemen prefer.

• • •

Your material worries are over when you call the MAUK Lumber Company.

Whatever your specific industrial lumber needs, we'll furnish the answer exactly–exact as to kind, specifications and price.

So, don't be bashful. Come on, tell MAUK everything.

• • •

There was once a little blond
Of whom the boys were fond
'Cuz she had the loveliest torso.
And when she was good
She was very, very good.
But when she was bad
She was more so.

• • •

The worst thing about history is that every time it repeats itself, prices go up.

• • •

She didn't want a job in burlesque because that bumpy road to success is a grind all the way.

• • •

I'm as patriotic as the next guy but I'd hate to have to choose between a fourth of July and a fifth of gin.

• • •

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Seattle 1, Washington

The C. A. Mauk Lumber Co.
Toledo, Ohio

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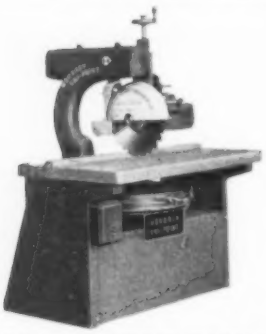
Designed for Profitable-Production!



MONARCH UNI-POINT RADIAL SAW
MODEL X36-AF

Revolutionary in performance, speed, accuracy and safety. Exclusive Uni-point principle means that **the saw blade always enters the wood at the same point in the table,** regardless of the cross cut angle. Increases man-hour production by 25%.

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Has every modern feature for precision heavy-duty production. Fully guarded ball-bearing wheels, ball-bearing roller guides, positive saw aligning and tensioning device. Direct or V-belt drive.

16"-18" TILTING ARBOR SAW BENCH
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Accurate and dependable for heavy production. All adjustments, convenient, easy-to-operate and safe. Capacity to 4½". Table 36" x 40". Saw tilts to 45°. 5-7½ H.P. Motors.

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FOREIGN WOODS

By GEORGE LAMB

Cortez—*Godmania aesculifolia*
Bignoniaceae (Trumpet Creeper) family

This family is a large one of more than 100 genera and several hundred species. Typically it is a tropical family. Many are climbing vines, the best known being the cultivated Trumpet Creeper. Catalpa and primavera are also of this family.

GODMANIA is found from Mexico to the Amazon basin but nowhere does it become more than a small tree. The heartwood is a dull yellow brown becoming darker with exposure; lustrous pale brownish sapwood; heartwood moderately hard and heavy; texture medium; grain irregular, often figured. It is easy to work and finishes smoothly. CORTEZ was imported experimentally in 1951.

Other names:
Guatemala–*PALO BLANCO*
Mexico–*HOCO, JOCO*
Salvador–*CORTEZA BLANCO*
Costa Rica–*CORTEZA DE CHIVO*
Other woods called *CORTEZ:*
TABEBUIA–Cortez colorado (Guatemala & Honduras)
Cortez venador (Costa Rica)
Cortez amarillo, C. coyote, C. nigro (Salvador)
THOUINIA–Cortez amarillo (Salvador)
APEIBA –Cortez, Cortexo (Panama)

White Dhup—*Canarium euphyllum*
Burseraceae (Bursera) Family

The Bursera family contains some sixteen genera and over 270 species widely distributed in tropical regions. It is rich in resins and supplies myrrh and frankincense. The most important timber in this family is Okoume.

DHUP is native to Burma and to the Andaman Islands. The tree is only slightly buttressed and reaches a height of 80 to 100 feet and a diameter of 2 feet. Clear length runs up to 40 feet.

The wood varies from nearly white to pinkish or yellowish grey, resembling Okoume in grain and texture but distinctly lighter in color. The grain definitely is interlocking and shows a stripe or mottle when quartered. It is lustrous. It ranks with Okoume and Basswood in hardness and weight Sp. gr. 0.38. DHUP seasons well but is subject to mould and discoloration. Supplies are said to be large and selected logs might have veneer possibilities.

Other names:
"Indian White Mahogany" (a misnomer).

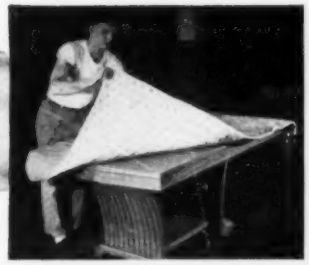
Morillo—*Trophis sp.*
Moraceae (Mulberry) Family

This family is a large one, widely scattered but

(Continued on page 40)

Kimpak* Float Packaging

DINING TABLE
Surface Protection



1. Pre-cut blanket of KIMPAK is laid over entire top of table.

2. KIMPAK blanket firmly taped in place protects all edges and corners of top.

3. Without further packaging protection, table is now ready for truck shipment to any part of the country.

Dining table illustrated is a product of the Ruway Furniture Company, Sheboygan, Wisconsin.

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KIMPAK creped wadding is a pre-fabricated, grit-free material available in many thicknesses. It's soft, clean, easy to apply as wrapping paper. Regardless of the type of product you ship—you'll find a specification of KIMPAK designed especially to protect against countless shipping hazards. It cannot mar or chemically affect any type finish—protects against scratching, rubbing, press-marking. And because KIMPAK is not a waste material, but comes in rolls or sheets, it can be "tailored" to meet your particular requirements.

Try KIMPAK soon—for any of the Four Basic Methods of Interior Packaging: Bracing and Blocking, Flotation, Surface Protection, Absorbent Packaging. For further information, see your nearest KIMPAK distributor listed in classified telephone directories under "Packing Materials" or "Packing Materials—Shipping"; or write to Kimberly-Clark Corporation, Neenah, Wisconsin.

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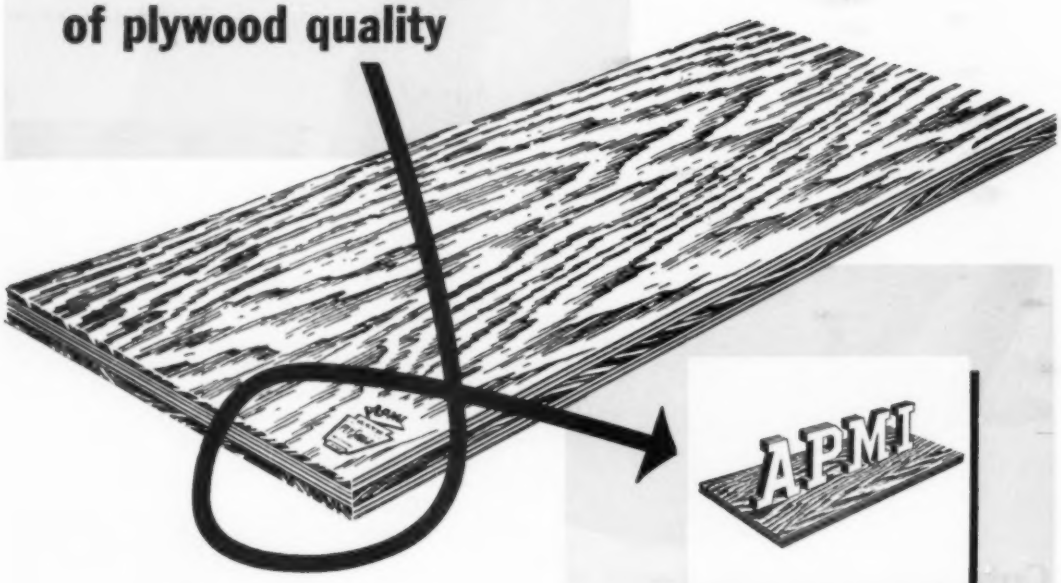

Something has been added in the labeling of plywood produced at Associated Plywood Mills, Inc. It is the APMI trademark, and you'll find it together with the DFPA grademark on both exterior-type and interior-type panels manufactured by this company.

This combination of trademark and grademark is your assurance that regardless of where you buy APMI plywood, you get the guaranteed products of a pioneer mill in the industry... There is a type, size and grade of APMI plywood for every building need... Sold from centrally located sales warehouses, and sold by experienced plywood men who welcome your inquiries for general information, for prices, for delivery schedules.

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4814 Bengal St., Dallas
4003 Coyle St., Houston
4268 Utah St., St. Louis
1026 Jay St., Charlotte, N. C.
Eugene and Willamina, Oregon

APMI MILLS

PLYWOOD — Eugene, Oregon
PLYWOOD — Willamina, Oregon
LUMBER — Roseburg, Oregon

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PLYWOOD MILLS, INC.

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for PRECISION PLA

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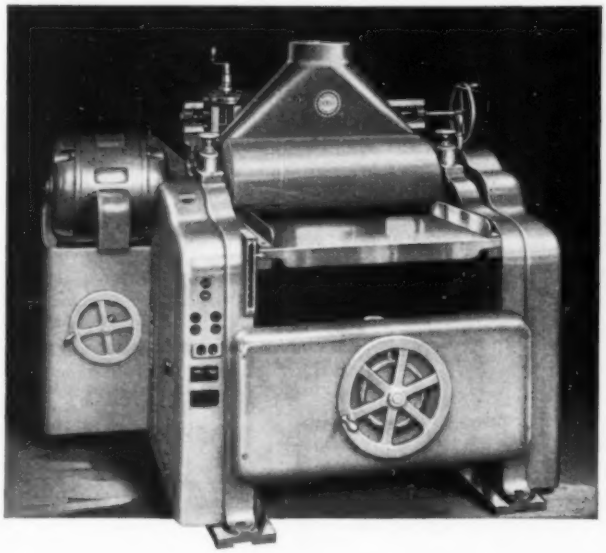
READILY MAINTAIN TOLERANCES AS CLOSE AS .002"



BUSS NO. 44 Single Surface Cabinet Surfacer
The complete line contains a type and size for every production set-up. Singles — small, medium and large; Double Surface type and the No. 55 for surfacing rough lumber. Bulletins on request.

Fine finished planing is produced by BUSS cabinet surfacers, in the hands of the average operator, with greater consistency than with any other planer. The reason for this is, that in addition to being built throughout for precision production, BUSS Surfacers are equipped with semi-automatic controls (exclusive BUSS features) which make it easy for the operator to get perfect settings, almost instantly.

For the greatest production of the kind of planing that saves time on following operations, investigate BUSS Cabinet Surfacers. There's one that ideally suits your needs.

ELIMINATION OF "SHAVING PRINTING"

Check your dust removal system. A weak or inadequate system is frequently the cause of this trouble. Further insurance against shaving printing is provided by the "Shearing Bar" — an exclusive, BUSS feature. Write for further details.

PLANER SPECIALISTS EXCLUSIVELY

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BUSS MACHINE WORKS

WOOD Combined With WOOD PRODUCTS

Industry Trends

This Month's Challenge

"The forest is your greatest weapon for future expansion in the United States—keep it growing." This is the advice of Dr. Carl Alvin Schenck, of Germany, veteran forester who founded the first forestry school in America, and is revisiting this country after an absence dating from 1938. Dr. Schenck first came to the United States in the early 1890's as forestry manager on the North Carolina Biltmore estate of the late George Vanderbilt. It was while there that he founded the Biltmore Forestry School, the first if its kind in this country. The school operated until 1913.

FURNITURE

Outlook

After the record buying of last January, buyers came to the Summer furniture markets with large inventories back home in their stockrooms, with the result that purchases were confined to immediate requirements rather than for future delivery. Manufacturers were unanimous in their opinion that materials will continue to be available, and that in spite of the present slightly downward trend in orders, furniture production is continuing at record levels, and shipments for the first half of 1951 promise to surpass those of the first half of 1950 by some 20 per cent.

It is believed that with the gradual leveling off of inventories, and the anticipated upward swing of defense housing, furniture orders may present a more healthful general picture of the entire industry during the fall and winter months.

LUMBER

Markets, Prices, Production

While the general tone of the lumber market indicates a definite downward trend, there are indications that its current movement may not continue for too long a time. The heavy

(Continued on page 12)

NORTH COAST DRY KILN
"DIRECT-FLO"

Reversible Circulation • Uniform Drying
NEW KILNS • KILN MODERNIZATION • KILN ACCESSORIES

The North Coast Dry Kiln is the most efficient kiln in operation today. The fans are positioned at the side of the lumber loads so that air follows the shortest possible "Direct-Flo" path. This insures uniform efficient drying for the lowest possible power consumption.

We can manufacture kilns to your specifications.

Write for details to Dept. W-3.
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ASH STOCK

The Atchafalaya Basin of Louisiana produces the most uniform white ash for color and texture in America. That's why the finest manufacturers use Port Barre White Ash.

Large and well assorted stocks are ready for immediate mill shipments at all times. We can meet your exact needs, all thicknesses and grades 5/8" to 12/4". Prompt attention will be given to your inquiries.

The Port Barre
Lumber Industries, Inc.
Manufacturers of Southern Hardwoods
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ALABAMA
Report No. 3033

FORD TRUCK ECONOMY RUN

"We haul 14 tons of logs for under 5¢ a mile!"

—says JOHN B. SWIFT,
Swift-Hunter Lumber Co., Atmore, Ala.

"I always thought Ford Trucks were economical," says Swift. "And now I've got personal proof of how *little* they cost to run!"

Lumberman Swift works his FORD BIG JOB every minute hauling logs from the woods to the sawmill. Swift entered his 1950 Ford F-8 BIG JOB, equipped with POWER PILOT, in Ford's nationwide Economy Run and says:

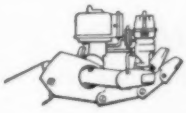
"My records for the 6-month Economy Run show my F-8 BIG JOB traveled 14,864 miles with an average load of 14 tons. Yet in spite of this rugged hauling, I spent only $729.97 for gas, oil, maintenance and repairs. That's a thrifty running cost of only 4.91 cents a mile!"

Like others who rely on Ford for low running costs, Swift is sold on the periodic, money-saving service he got from his local Ford Dealer. For more facts on the trucks that last longer *and* save you money every mile—mail coupon below.

This 1951 145-h.p. Ford F-8 BIG JOB has power reserves that lumbermen really appreciate! Two fine cabs—the 5-STAR, and, at slight added cost, the 5-STAR EXTRA—give you better efficiency, safety and driving ease. Choice of 5 wheelbases. Full air brakes optional at extra cost. Gross train weight rating: 39,000 lbs. Whatever you haul, Ford builds over 180 different truck models to help solve your hauling problems.

Availability of equipment, accessories and trim as illustrated is dependent on material supply conditions.

POWER PILOT HELPS LUMBERMEN HOLD DOWN HAULING COSTS



The Ford Truck Power Pilot is a simpler, fully-proven way of getting the most power from the least gas. It is designed to synchronize firing *twice* as accurately.

You can use regular gas . . . you get no-knock performance. Only Ford in the low-price field gives you Power Pilot Economy.

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because FORD TRUCKS LAST LONGER!

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Light Models ☐ **Extra Heavy Duty Models** ☐

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TRENDS

(Continued from page 10)

inventories that were built up during the early months of the year were expected to help meet anticipated spring demand, but the expected heavy demands did not materialize. Due to decline in home building and smaller government requirements, buyers were hesitant to purchase beyond specific needs until government controls were more carefully analized and restrictions and limitations of usage were more clearly defined.

There is a prevalent feeling throughout the industry that if construction continues at the present rate, augumented by possible government defense purchasing, a turn upward in the general lumber picture may develop in the third or fourth quarter of the year.

Many of the larger mills are not curtailing production to any appreciable degree, and lumber stocks are expected to gradually attain more healthy proportions.

Amazing Bottleneck Smasher for Wood Gluing Departments

Thermatron Offers a Complete Engineering Service, Too!

The picture is complete when THERMATRON—under one contract *and one responsibility*—supplies the electronic equipment, presses and "know-how" in your wood gluing department. Eliminate the bottleneck for faster, better, more economical production!

THERMATRON will analyze your product and production, recommend the generators and jigs to carry the load, supply them custom built, if necessary . . . But we don't stop there! The production set-up, including adequate power and air supply, adjustment of jigs, instruction of your factory personnel . . . all these are important links in the chain of THERMATRON service. Maintenance service, too, is available on short notice.

We'd like to discuss your wood gluing problems with you. Whether you are interested in initiating an electronic bonding installation—or whether you are in need of information concerning existing equipment, THERMATRON engineers are at your disposal for consultation without obligation. Write us now, and also request our new bulletin W-5.

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Standard stock generators available from 500 watt to 20 KW output, operating on 110 or 220 volts. Larger size generators up to 100 KW can be supplied for larger requirements.

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CONSTRUCTION

June Expenditures Show Increase

Expenditures for new construction in June totaled $2,700 million, an increase of six per cent over May, according to preliminary estimates made jointly by the U. S. Labor Department's Bureau of Labor Statistics and the Building Materials Division, U. S. Department of Commerce.

With the exception of commercial building, which was beginning to reflect the effects of construction controls, almost all types of construction expenditures increased over May.

FREIGHT CARS

Loadings

Freight car loadings of forest products begin to show a decline, latest figures indicate. Loadings for the first 27 weeks of the year ending July 7th show an increase of 18.5 per cent over 1950 car loadings, and 26.9 per cent over 1949.

Forest products car loadings for the first 27 weeks of the year:

	Carloads	% Increase
1951	1,241,911	....
1950	1,047,697	18.5
1949	978,888	26.9

FLOORING

Heavy Demand Tapering Off

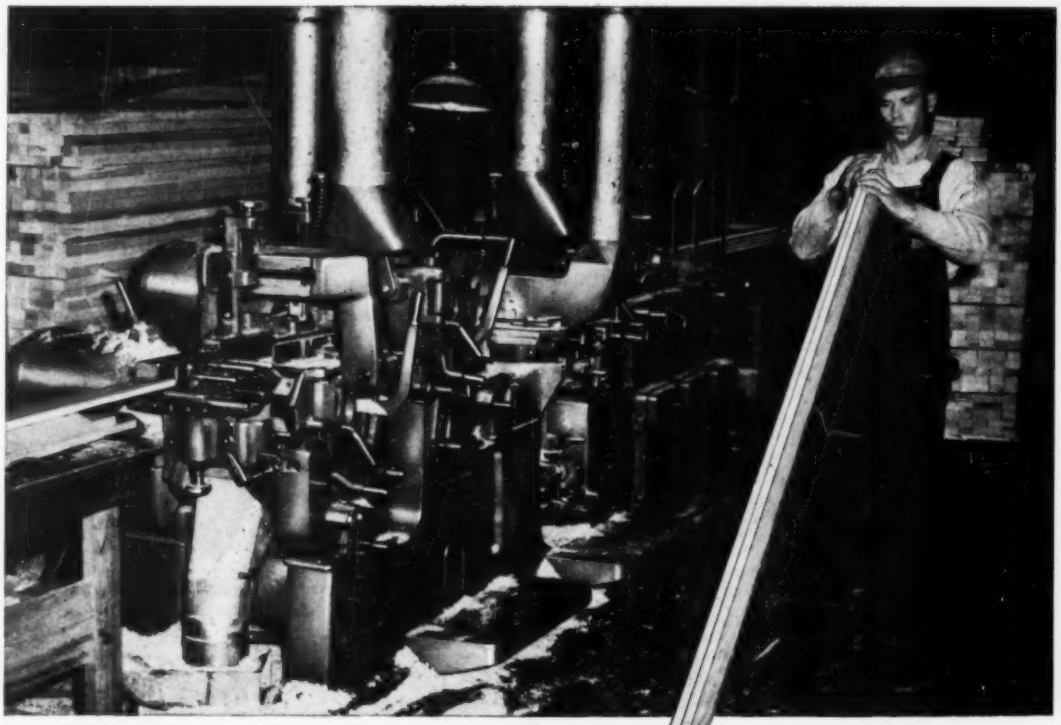
Although home building dropped off 16 per cent in the first four months of this year as compared with the first third of 1950, hardwood flooring demand reached an all-time high for the period. A substantial portion of the strong demand was due to the large carry-over of unfinished homes from 1950. A tapering off of this unusually heavy demand is anticipated in view of the fact that home building in the remainder of the year is expected to drop further behind its 1950 pace.

PLYWOOD

Government Usage Increased

The NPA has indicated that an increased government use of hardwood plywood will be encouraged. An industry committee will gather data on

(Continued on page 14)



MATTISON MOULDER PAID FOR ITSELF IN LESS THAN 6 MONTHS WHILE ADDING TO QUALITY OF WORK AND DOUBLING THE OUTPUT.

This is what Mr. Van J. Costello, manufacturer of Millwork Branch of Northwest Timber Company of Gibbs, Idaho says about the Mattison 229 5-Head Moulder. The results were accomplished in less than 6 months. He states:

> "We are not 'Big Spenders'. When we undertook the purchase of this machine, I had to submit proof that I could pay for it out of the profit the machine itself would add to our operation. The check list, or program that I set up is practically completed, and I can show, in actual figures, that this moulder paid for itself while it was adding to the quality of our work, and doubling the output of our plant".
>
> To sum up: We carefully inquired into the various makes of moulders. The result is that we are completely satisfied with the machine and somewhat proud of our own good judgment."

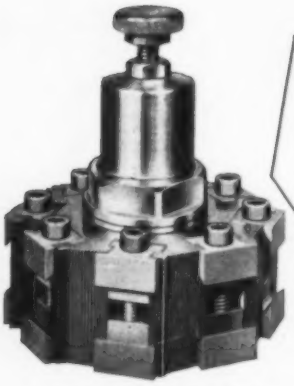
Northwest Timber Company manufactures K.D. Window and Door Frames, Mouldings, Inside Trim, Novelty Cut Stock, etc. Mr. Costello says further:

> "We find that this moulder is particularly adapted to our needs in that it is easily set, has adequate speed for long runs, and, most important, is a precision machine which meets the rigid requirements of a frame manufacturer. In other words, our products have to fit together, and your machine makes this possible."

It is possible that a new Mattison Moulder can do the same for you. If you would like further information regarding the Mattison line of Moulders, let us know, and we'll gladly send it to you.

MATTISON MACHINE WORKS

ROCKFORD · ILLINOIS



CLAMP T-SLOT HEAD HCS-8
Shown without bits to illustrate design and action of clamps. Full cross adjustment provides for perfect alignment of various pattern bits. Available in 4, 6 or 8 Bit Styles.

The HEAD of its Class

Simple and rugged in construction . . . versatile in use . . . the BADGER Clamp T-Slot Head is used on today's finest moulders and matchers. With milled-to-pattern bits ground to your specifications, it is the Head of its Class for your production runs.

Full lateral adjustment, positive bit retention, and simple, straight-bevel face-sharpening provide assurance that patterns will remain true. Non-Perishable head-body of solid steel is built for years of heavy-duty service . . . through countless changes of bits. Consult Wisconsin for competent cutterhead counsel that will help step up the quality and quantity of your production.

CUTTER HEADS BADGER KNIVES

Engineers to the Woodworking Industry

WISCONSIN KNIFE WORKS

BELOIT, WISCONSIN

A 5970-1a

Only the Best that Northern Hardwoods Offer

Rotary, Sliced, & Half-Round

VENEERS

In The Following Species:

Birch – Maple – Bass – Ash
Oak – Elm – White Pine

PENOKEE VENEER COMPANY

TELETYPE, MELLEN, WIS. 29 TELEPHONES 205-3313
P. O. BOX 220
MELLEN, WISCONSIN

TRENDS

(Continued from page 12)

broadening specifications (which now call for softwood plywood) to allow for interchangeability of the two types. No federal limitation or restriction on hardwood plywood is currently being considered.

Total softwood plywood production this year probably will be three billion board feet (on a three-eighth-inch basis), NPA said, compared to 2.4 billion produced in 1950. Hardwood plywood this year may reach 1.3 billion board feet (on a one-quarter-inch basis), as opposed to the 1950 output of 1.15 billion board feet.

EQUIPMENT

Woodworking Machinery

Industry representatives agreed with NPA that facilities to produce woodworking machines probably are adequate to meet all 1951 demands unless a new world war breaks out. They said indications are that all defense and essential civilian requirements can be filled with little difficulty provided sufficient materials are made available.

Officials pointed out that woodworking machinery manufacturers who have received very few DO-rated orders for their products—will soon receive authorized controlled materials allotments to cover both civilian and military orders under CMP.

Age of Equipment

It has been estimated that 65% of the sawmill and woodworking equipment now in use is over 25 years of age. Of this amount about 25% has been rebuilt and modernized to some extent. This leaves 40% that should be replaced for more efficient production.

TIMBER

Preservation

Important research work being carried out in Australia on methods of timber preservation embraces many problems that are universal and of interest to the industry in all countries.

The Forest Products Division of the Commonwealth Scientific and Industrial Research Organization in

(Continued on page 16)

THE TREE BEHIND THE TREE

The tree behind the tree is the tree you never see. It's the margin of waste that is being redeemed by *Resineering*. Great advances are being made by applying engineering principles to improve wood, paper and pulp products through the use of BAKELITE Phenolic, Urea, and Resorcinol Resins.

Here are a few examples, in brief, of getting more out of our forests through *Resineering:*

Resin adhesives are employed for the gluing of fine furniture, exterior and interior grades of plywood, and marine and aircraft sections.

Wood aggregates using these resins as binders, are molded into furniture and structural components and into boards having many uses.

Resin-treated paper stocks acquire new properties, such as strength and moisture-resistance, that permit their use as masking and surfacing sheets for plywood. A related development—resin-impregnated crossbanding sheet—upgrades plywood by hiding knots, cracks and other imperfections, and minimizing warpage.

Pulps reinforced with resins added at the beater, are further processed into such products as wet-strength paper bags, rigid building board, and preforms for molded plastic products of high impact resistance and fine surface finish.

Treated paper is formed into rigid honeycomb cores that provide extremely high strength-weight ratios for such uses as aircraft flooring, truck paneling, furniture, fixtures.

These examples of *Resineering* applied to wood, paper, and pulp products may suggest answers to some of your problems. Address inquiries to Dept. CH-26.

BAKELITE
TRADE-MARK
PHENOLIC, UREA and RESORCINOL RESINS

TRADE MARK

BAKELITE COMPANY
A Division of
Union Carbide and Carbon Corporation
30 East 42nd Street, New York 17, N. Y.

KILN DRIED LUMBER

FOR

immediate shipment

EITHER TRUCKLOAD OR CARLOAD LOTS

Northern Hardwoods

Basswood	4/4 to 6/4
Birch	4/4 to 8/4
Hard Maple	4/4 to 8/4
Soft Elm	4/4 to 10/4

Appalachian Hardwoods

Beech	4/4 to 8/4
Red Oak	5/8 to 8/4
White Oak	5/8 to 8/4

Southern Hardwoods

Ash	4/4 to 12/4
Basswood	4/4 to 6/4
Cottonwood	4/4
Sap Gum	4/4 to 8/4
Tupelo Gum	4/4 to 8/4
Red Gum	4/4
Soft Maple	4/4 to 12/4
Sycamore	5/8, 4/4
Pecan	4/4, 5/4
Poplar	4/4 to 10/4

Mahogany

Honduras	4/4 to 12/4

Walnut

Steamed	5/8 to 8/4

Pine

Parana (Brazilian)	4/4, 5/4

The above hardwoods are in No. 1 Com. & Better Grades

and generally are available in higher grades.

Your inquiry will receive prompt and courteous attention

MONARCH HARDWOOD LUMBER CO.

3304 W. Belmont Ave.

Chicago, Ill. Tel. JUniper 8-1234

TRENDS

(Continued from page 14)

Melbourne, Victoria, is the center of this research activity. One phase of current work in preservation has been concerned with studies of the toxicity and permanence of various water-born preservatives likely to be suitable for the pressure treatment of timber, particularly for timber to be used in collieries as pit props.

UTILIZATION

Plywood Containers

In 1936 R. J. Reynolds Tobacco Co. began experimenting with plywood hogsheads. Today the three large tobacco companies use over two million collapsible hogsheads. The salient features are lightness, simplicity of construction, compactness for return shipment of empties, elimination of large cooperage repair shops, savings in shipping costs. As a result of the experience of the tobacco industry, many large industries are now looking into the use of returnable collapsible plywood containers as a way of saving space, labor, and money. Don't be surprised if the collapsible plywood container develops into a sizable business in the years to come.

Naval Stores

In recent years the distillation of wood turpentine and rosin from old stumps and the byproducts of sulphate woodpulp has accounted for about 90% of the annual U. S. production of some thirty-three million gallons of turpentine and one billion pounds of rosin. Twenty-nine big steam stills, most of them in Georgia, produce about 75% of the total. Pine stumps on cutover land were not only waste but hindered development of the land. Today the stumps are harvested by specially equipped bulldozers, loaded on trucks or railroad cars, and shipped as much as 400 miles to the plant. It is then split, hogged, and the chips steam distilled to release the volatile turpentine and pine oil, and treated with an oil solvent to extract the rosin. It is estimated that the supply of pine stumps in the South, though exhaustible, will be enough to supply the industry for many years to come.

MANSFIELD Dimension SERVICE

Check these 5 points . . .

1. **LOGS** . . . from Mansfield's perpetual yield timberlands insure our raw material.
2. **LUMBER** . . . selected from 40,000,000 ft. of Hardwoods and Pine produced yearly in Mansfield's two bandmills.
3. **CRAFTSMANSHIP** . . . modern machinery, trained manpower, experience and know-how.
4. **PRODUCTS** . . . though specializing in glued-up panels and moulded stock we are equipped to handle your entire Dimension Stock requirements.
5. **SERVICE** . . . dependable and set up to meet your most exacting requirements.

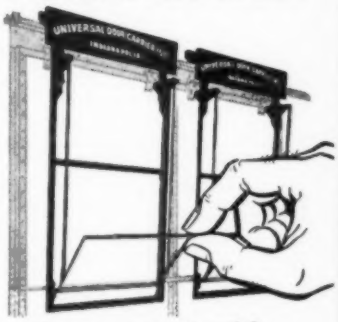
Send us your specifications today for all your Dimension needs. Prices, samples and delivery dates will be promptly furnished.

MANSFIELD HARDWOOD LUMBER COMPANY

P. O. Box 91 Shreveport, La.

Band Mills: Zwolle and Winnfield, La. . . . Dimension Plant: Zwolle, La.

Handle Dry Kiln Doors SINGLE-HANDED?



You can do it with

The Universal **DOOR CARRIER**

One man—with one hand—and a Universal Carrier can open or close a kiln *in a few seconds.* And the carrier makes your doors last longer!—by gentler handling, without twist or strain. Automatic locking gives you good tight closures every time.

Write for further facts!

Universal **DOOR CARRIER, INC.**

1117 Cornell Avenue
Indianapolis 2, Ind.

KILN DRIED LUMBER

FOR

immediate shipment

EITHER TRUCKLOAD OR CARLOAD LOTS

Northern Hardwoods

Basswood	4/4 to 6/4
Birch	4/4 to 8/4
Hard Maple	4/4 to 8/4
Soft Elm	4/4 to 10/4

Appalachian Hardwoods

Beech	4/4 to 8/4
Red Oak	5/8 to 8/4
White Oak	5/8 to 8/4

Southern Hardwoods

Ash	4/4 to 12/4
Basswood	4/4 to 6/4
Cottonwood	4/4
Sap Gum	4/4 to 8/4
Tupelo Gum	4/4 to 8/4
Red Gum	4/4
Soft Maple	4/4 to 12/4
Sycamore	5/8, 4/4
Pecan	4/4, 5/4
Poplar	4/4 to 10/4

Mahogany

Honduras	4/4 to 12/4

Walnut

Steamed	5/8 to 8/4

Pine

Parana (Brazilian)	4/4, 5/4

The above hardwoods are in No. 1 Com. & Better Grades

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MANSFIELD
Dimension
SERVICE

Check these 5 points . . .

1. **LOGS** . . . from Mansfield's perpetual yield timberlands insure our raw material.
2. **LUMBER** . . . selected from 40,000,000 ft. of Hardwoods and Pine produced yearly in Mansfield's two bandmills.
3. **CRAFTSMANSHIP** . . . modern machinery, trained manpower, experience and know-how.
4. **PRODUCTS** . . . though specializing in glued-up panels and moulded stock we are equipped to handle your entire Dimension Stock requirements.
5. **SERVICE** . . . dependable and set up to meet your most exacting requirements.

Send us your specifications today for all your Dimension needs. Prices, samples and delivery dates will be promptly furnished.

MANSFIELD HARDWOOD LUMBER COMPANY
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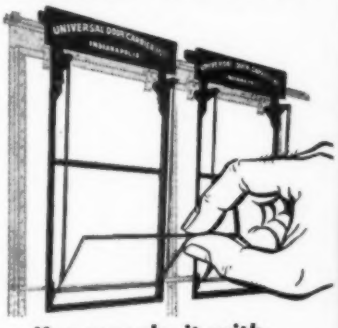
Band Mills: Zwolle and Winnfield, La. . . .
Dimension Plant: Zwolle, La.

Handle Dry Kiln Doors SINGLE-HANDED?



You can do it with
The Universal **DOOR CARRIER**

One man—with one hand—and a Universal Carrier can open or close a kiln *in a few seconds.* And the carrier makes your doors last longer!—by gentler handling, without twist or strain. Automatic locking gives you good tight closures every time.

Write for further facts!

Universal **DOOR CARRIER, INC.**
1117 Cornell Avenue
Indianapolis 2, Ind.

PERFECT COMBINATION

for Lasting Beauty

It's the perfect combination of Glidden color styling and fine wood finishes which complement skilled furniture craftsmanship.

Glidden—continually progressive in the development of quality wood finishes and the advancement of modern color styling—offers you prompt help with any wood finishing problem.

A Glidden technician is ready to assist you, without cost or obligation. Write today.

THE GLIDDEN COMPANY

DEPARTMENT N-851 • 11001 MADISON AVENUE • CLEVELAND 2, OHIO

Glidden

Glidden *Product Finishes*

STAINS • FILLERS • GLAZES • SEALERS • LACQUERS • VARNISHES • UNDERCOATS • ENAMELS

In hub deep mud... over sharp stumps and rocks... out and over the highway

GENERALS

move heavy loads

EASIER! FASTER! AT LOWER COST!

GENERAL L. C. M. is built stronger from beads to tread to take heavy loads out of backwoods country and over-the-highway fast and easy. Extra carcass strength, tough tread and shoulder lugs resist snags and bruises . . . last longer. More profit per load.

GENERAL H. C. T. with a deep-grooved tread and sturdy shoulder cleats for more safety under heavy loads at high speeds. Rolls freely, stops faster. Special shock-absorber construction with impact cushion shoulders and extra impact plies protect against breaks and separations.

THE GENERAL TRUCK TIRE

REQUEST GENERAL TIRES ON YOUR NEW EQUIPMENT

MARKETS

These prices are estimates made available by Mr. George Land, publisher of the *Hardwood Market Report*, and reflect prices as indicated in his copyrighted issue of July 21, 1951. Mr. Land's complete report is available weekly; those who want the entire list should contact him c/o Box 5716, Memphis 4, Tenn.

SOUTHERN HARDWOODS

F.O.B. mills—Texas & Louisiana area—estimate of present FOB Texas & Louisiana mill point average ceiling price sales made subsequent to January 25, 1951 to consuming trade on band-sawn Southern Hardwoods in carload quantities, random widths & lengths, rough air dried & graded in accordance with NHLA rules on inspection. Prices in dollars per M', on straight cars of upper bracket grades premiums are frequently being paid.

ASH—FIRM TEXTURE

	FAS	No. 1C	No. 2C
4/4-in.	153	108	60
6/4-in.	168	120	67
8/4-in.	180	140	70

BASSWOOD

4/4-in.	160	125	80
6/4-in.	170	135	87
8/4-in.	180	145	90

BEECH

4/4-in.	125	100	62
6/4-in.	145	110	67
8/4-in.	167	127	72

CHERRY
Same as Appalachian

RED GUM—PLAIN

4/4-in.	210	160	70
6/4-in.	230	170	75

RED GUM—QUARTERED

4/4-in.	235	175	75
6/4-in.	250	200	90
8/4-in.	260	210	95

SAP GUM—PLAIN

	FAS	No. 1C	No. 2C
4/4-in.	132	112	
6/4-in.	165	135	
8/4-in.	165	145	

HACKBERRY

4/4-in.	110	90	65
6/4-in.	130	108	76
8/4-in.	135	110	75

HICKORY
Temporarily suspended

MAGNOLIA

4/4-in.	170	135	78
6/4-in.	185	143	87
8/4-in.	205	160	90

SOFT MAPLE—WHAD

4/4-in.	130	110	67
6/4-in.	145	130	77
8/4-in.	155	125	80

SOFT MAPLE—WHND

4/4-in.	120	95	65
6/4-in.	130	105	75
8/4-in.	135	110	80

RED OAK—PLAIN

4/4-in.	180	110	
6/4-in.	192	135	
8/4-in.	200	140	

WHITE OAK—PLAIN

4/4-in.	185	115	
6/4-in.	195	140	
8/4-in.	205	145	

PECAN

	FAS	No. 1C	No. 2C
4/4-in.	117	97	55
6/4-in.	135	115	70
8/4-in.	155	130	70

POPLAR—PLAIN

			No. 2A
4/4-in.	170	130	80
6/4-in.	185	140	87
8/4-in.	205	150	90

SYCAMORE—PLAIN

			No. 2C
4/4-in.	117	97	60
6/4-in.	125	105	60

TUPELO—PLAIN
TUF TEXTURE—DEEP SWAMP

4/4-in.	132	112	
6/4-in.	155	135	
8/4-in.	160	140	

WILLOW

4/4-in.	142	122	65
6/4-in.	142	122	67
8/4-in.	150	125	70

APPALACHIAN HARDWOODS

F.O.B. mills—Johnson City, Tennessee area—estimate of present FOB Appalachian mill point average ceiling price sales made subsequent to January 25, 1951 to consuming trade of band-sawn Appalachian hardwood in carload quantity, random widths & lengths, rough, air dried, & graded in accordance with NHLA rules of inspection. Prices in dollars per M', on straight cars of upper bracket grades, premiums are frequently being paid. Basis selected for the purpose of indicating transportation costs to principal consuming markets from Johnson City, Tennessee area.

NASH "85" CHAIRBACK SANDER

SAVES COSTS ON SMALL LOTS OR LARGE PRODUCTION RUNS

● The use of this machine eliminates slow, manual sanding over the large sanding drum, which is not only tedious but often responsible for injury to the operator. Due to its quick set-up features, the Nash "85" Chairback Sander will save costs on small lots as well as large production runs. It will sand curved and serpentine chair stock up to 1½" in thickness and 6" in height at a production rate of 18 to 55 feet per minute . . . assures uniformity, parallelism of stock and an excellent finish.

The only setup required on the Nash 85 is adjusting the feed roller to the thickness of stock and regulating pressure for desired stock removal. One side of stock is sanded as it passes through machine, and by simply reversing the piece and feeding it through again, the sanding operation is completed. Feed roller has controlled spring adjustment which maintains a constant pressure on the curved stock. Pressure being variable permits control of stock removal.

Write for descriptive literature

FOR SPEEDIER, SAFER SANDING OF CURVED CHAIR PARTS

J. M. NASH COMPANY

Dept. CB-85, 2359 N. 30th St., MILWAUKEE 10, WIS.

SPECIAL FINISHING MACHINES · NASH · SINCE 1890 ·

TOUGH ASH

	FAS	FIF	No. 1C	No. 2C
4/4-in.	160	150	110	67
6/4-in.	180	170	122	72
8/4-in.	190	180	147	85

BASSWOOD

				No. 2A
4/4-in.	180	170	130	84
6/4-in.	190	180	137	94
8/4-in.	195	185	147	96

BEECH

				No. 2C
4/4-in.	145	135	110	75
6/4-in.	160	150	120	75
8/4-in.	170	160	130	80

BIRCH

4/4-in.	205	195	140	80
6/4-in.	220	210	150	85
8/4-in.	230	220	155	90

BUCKEYE

4/4-in.	135	125	100	65
6/4-in.	160	150	115	73
8/4-in.	165	155	120	78

CHERRY

4/4-in.	200	190	135	80
6/4-in.	235	225	160	85
8/4-in.	250	240	170	90

CHESTNUT

4/4-in.	165	...	115	60
6/4-in.	170	...	120	62
8/4-in.	175	...	125	62

HICKORY

4/4-in.	125	115	78	53
6/4-in.	145	135	86	58
8/4-in.	165	155	90	60

HARD MAPLE

4/4-in.	190	180	125	80
6/4-in.	200	190	135	84
8/4-in.	205	195	145	90

SOFT MAPLE

4/4-in.	160	150	115	67
6/4-in.	170	160	125	69
8/4-in.	175	165	130	72

RED OAK—PLAIN

	FAS	FIF	No. 1C	No. 2C
4/4-in.	185	175	120	
6/4-in.	200	190	135	
8/4-in.	215	205	145	

WHITE OAK—PLAIN

4/4-in.	200	190	125	
6/4-in.	220	210	145	
8/4-in.	235	215	155	

WHITE OAK—WHND

4/4-in.	115	105	85	...
6/4-in.	140	130	110	...
8/4-in.	150	140	115	...

YELLOW POPLAR—PLAIN

				No. 2A
4/4-in.	210	200	140	88
6/4-in.	220	210	150	93
8/4-in.	230	220	160	..

POPLAR SQUARES

	FAS	No. 1C & 8D
4x4-in.	245	175
6x6-in.	280	190
8x8-in.	340	240

WALNUT—STEAM TREATED

	FAS 6' & up	FIF 6' & up	No. 1C	No. 2C
4/4-in.	350	305	185	80
6/4-in.	370	325	210	95
8/4-in.	385	340	235	100

Walnut list reflects average fob mill, all areas. Basing point not generally observed.

NORTHERN HARDWOODS

Estimate of present FOB Wausau, Wisconsin mill point average ceiling price sales made subsequent to January 25, 1951 to consuming trade on band-sawn Northern hardwoods in carload quantities random widths & lengths, rough air dried & graded in accordance with NHLA rules on inspection. Prices in dollars per M'.* On straight cars of upper bracket grades, premiums are frequently being paid.

BROWN ASH

	FAS	No. 1C	No. 2C
4/4-in.	145	105	73
6/4-in.	155	120	83
8/4-in.	160	130	88

BASSWOOD

4/4-in.	180	125	78
6/4-in.	190	135	88
8/4-in.	195	145	96

BEECH

4/4-in.	145	100	68
6/4-in.	160	115	78
8/4-in.	165	120	80

BIRCH

4/4-in.	265	145	80
6/4-in.	275	160	90
8/4-in.	280	175	100

ROCK ELM

4/4-in.	135	115	65
6/4-in.	145	125	75
8/4-in.	150	135	80

SOFT ELM

4/4-in.	125	105	71
6/4-in.	135	115	81
8/4-in.	140	120	86

HARD MAPLE

4/4-in.	190	130	78
6/4-in.	200	140	81
8/4-in.	205	145	82

SOFT MAPLE

4/4-in.	155	120	72
6/4-in.	170	130	82
8/4-in.	185	140	90

RED OAK

4/4-in.	175	125	77
6/4-in.	185	145	82
8/4-in.	195	155	85

* Air dried Northern Hardwoods are no longer available and sales presently being made cover green stock or stock only partially seasoned. Orders are being placed for stock to be cut and shipped green when accumulated.

WHOA!

Don't overload your production capacity! Let *Gamble Brothers* furnish the parts you need to handle defense orders, without delay and without investment in new equipment, facilities, and personnel. Use Gamble Brothers' solid or laminated wood parts, rough or finished, ready to assemble.

Gamble Brothers, with fifty years' experience in wood engineering, will also be glad to help you solve your re-design problems . . . with no obligations.

WRITE TODAY!

Gamble Brothers Incorporated

Engineered Wood Parts in Southern and Appalachian Hardwoods, Walnut or Mahogany

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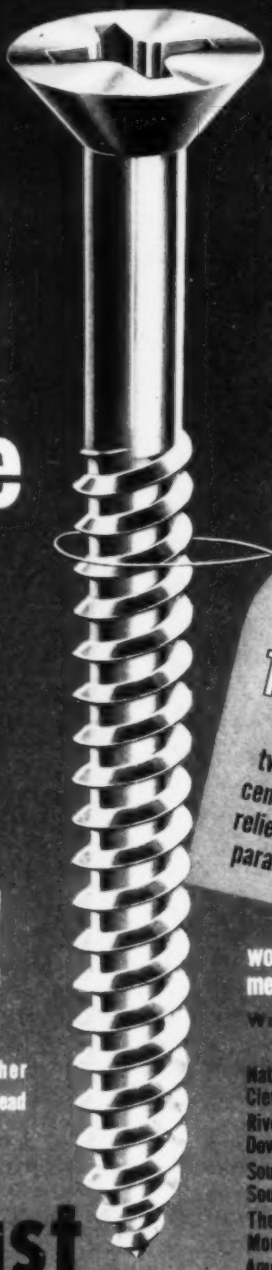
The Double Thread Cuts the Time in Half!

Can be furnished with either Slotted or Phillips recessed head



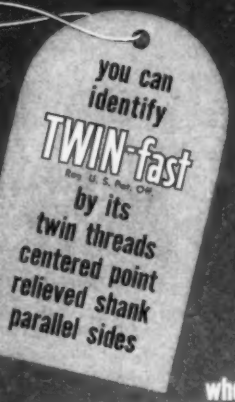
TWIN-fast

Reg. U. S. Pat. Off.
2,314,391 – 2,314,390 – 2,373,878
2,373,948 and 2,483,186

The Faster Driving . . . Cost Cutting Fastener

Save assembly time . . . . . get better fastenings with the TWIN-fast Screw's four exclusive advantages

1. Twin thread doubles the pitch . . . drives the screw twice as far for each turn of the driver.
2. Centered point helps make fast, straight start—no wobbling of screw, no displacement of parts.
3. Relieved shank eliminates "wedge action" and splitting—makes stronger fastening.
4. Parallel sides (no taper except at point) gives greater contact—often allows fewer or smaller screws.



save TIME
save DRILLING
save SCREWS
save REJECTS

when assembling wood to wood, plastic to wood or metal to wood

Write for new TWIN-fast bulletin to any of these firms:

National Screw & Manufacturing Company
Cleveland, Ohio, and Los Angeles, Calif.
Rivco, Inc.
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The Stowell Screw Co., Ltd.
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FROST Hardwoods

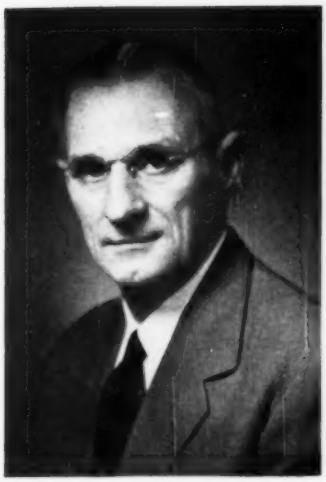
From the moment the car door is opened on a shipment of Frost Hardwoods at your plant, Frost quality minimizes lost motion. As shipped to your specification, stock provides the highest cutting value with least waste; uniform drying and texture that facilitate fabrication; rapid flow of semi-finished units to their final machine processing . . . in short, precision from A to Z. These are the factors for which Frost Hardwoods are preferred by woodworkers who know them best . . . these, the reason for *your* inquiry covering your next requirements.

FROST LUMBER INDUSTRIES, INC.

SHREVEPORT, LOUISIANA

J. P. WEYERHAEUSER, JR.

J. W. McClure



CARL A. RISHELL

Wood Salutes

With this issue, we are saluting three more top rank executives, each of whom is contributing his expert knowledge and experience in an important department of the forest products industries.

J. P. Weyerhaeuser, Jr.

Both visionary and practical, John Philip Weyerhaeuser, Jr., is president of the Weyerhaeuser Timber Company, which supports 14,000 employees and four pulp mills, a plywood plant and eight sawmills centers in Oregon and Washington with sustained timber crops from 2½ million acres of tree farm lands.

Phil, as he is known to his friends, acquires his liking for trees, logs, lumber and pulp naturally. A third generation Weyerhaeuser, both his father and grandfather were active in the industry. Frederick Weyerhaeuser came west in 1900 to found the company in Tacoma, Washington, still its home office. Phil, Jr. is a son of one of Frederick's four sons, John Philip Weyerhaeuser.

Phil, Jr., was born January 18, 1899 at Rock Island, Illinois, and was graduated from Yale University, after war interrupted his course in 1918.

From 1921-1931 he held various managerial jobs with the Edward Rutledge Lumber Co. and Clearwater Timber Co. In 1931-32 he was elected president of Potlatch Forests, Inc., after its creation by merger of Clearwater Timber Company, Edward Rutledge Timber Company and Potlatch Lumber Company.

He assumed the office of executive vice-president of Weyerhaeuser Tim-

(Continued on page 73)

J. W. McClure

Mr. Hardwood is an apt description of John W. McClure, Secretary-Manager, National Hardwood Lumber Association, Chicago, Ill., who has been associated with the hardwood lumber business since 1897. A Tennessean, he was born in 1878 and spent most of his early business life in Memphis. From a lumber business of his own in 1902 to the operation of one of the best associations in the industry covers a lot of hardwood history.

Mr. McClure was secretary-treasurer and sales manager of the Memphis Hardwood Flooring Co. during the '20's. He went to Washington, in 1933, as the first lumber price controller under NRA, as Assistant Executive Officer of Lumber Code Authority, and Chief of the Cost and Prices Division.

Association work climaxed with becoming secretary-manager of NHLA in 1934, included: secretary, Memphis Lumberman's Club—1907; one of the organizers and second president of the Southern Hardwood Traffic Institute, one of the organizers and a vice-president of the Hardwood Manufacturer's Institute; director and vice-president, National Lumber Exporters' Association; president, NHLA —1921-22; and president, National Wholesale Lumber Association, 1920-21.

(Continued on page 73)

Carl A. Rishell

Mr. Rishell's early training included the management of forest land in eastern Maryland, but his real interest lay in forest utilization. This led to his employment with the W. M. Ritter Lumber Company of Columbus, Ohio. Starting as an assistant kiln operator, he was made chief kiln operator for all plants in 1926. He later became assistant to the general manager and was responsible for the reduction and utilization of wastes in the flooring plants and other fabricating facilities of the company.

While there, he made on outstanding study in methods of cutting low grade lumber in conversion to hardwood flooring.

In May, 1934, Mr. Rishell went to Washington, D.C., as assistant chief of the Cost and Price Department of the Lumber Code Authority, later becoming Technical Assistant to the Administrator of the Forest Products Industry Division of NRA.

He came to the National Lumber Manufacturers Association in 1936 as Chief of its Hardwood Division and was named Director of Research for NLMA and TECO in 1943. In the research field, he and his associates have built an organization that has received world-wide prominence for its excellence in developing practical

(Continued on page 73)

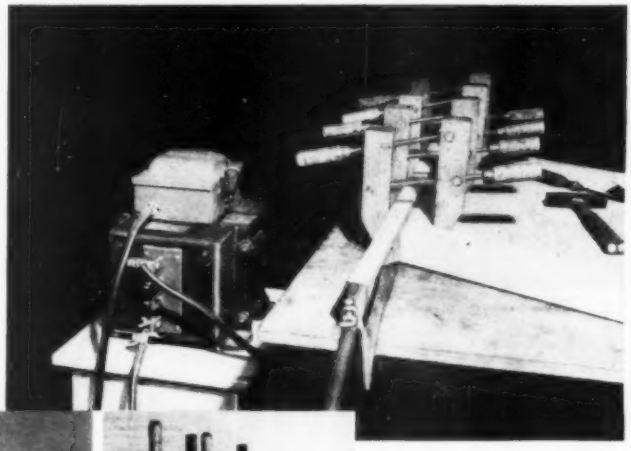
Faster, more durable
EDGE-BANDING, ASSEMBLY GLUING

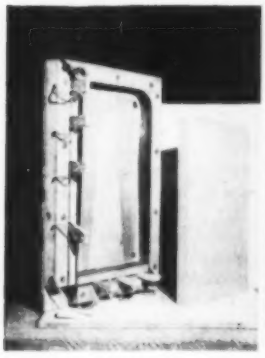
. . . with Borden's Resin Glues and the new resistance heaters

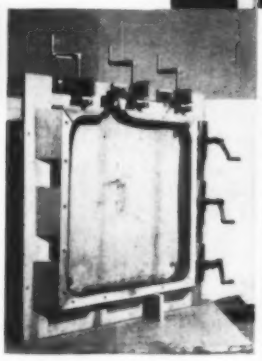
Here's how table-top makers beat shortages of certain types of assembly glues and metal edging.

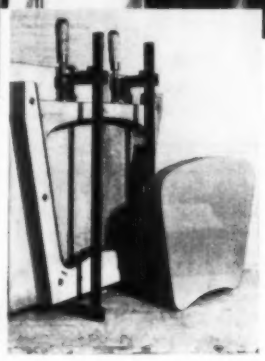
They use CASCAMITE or CASCO-RESIN urea resin glues . . . and bond veneer or Formica edge-bands in *one or two minutes* with versatile resistance heaters.

Borden's urea resins are easy to mix and provide long working life . . . yet they cure quickly under heat to form a durable, water-resistant, stain-free bond that "up-grades" the finished piece.









▲ Using the resistance heater without an assembly jig for "special order" edge-banding or repairing and patching. Curing cycle, with CASCAMITE No. 12 dry powder urea resin glue: 30 seconds. The same method can be applied to corner joints, laminated parts, molded parts. Hidden joints can be preheated *before* assembly.

▲ Typical jigs, utilizing wedges and clamps, for edge-banding irregular shaped cocktail and lamp tables. Air hose may be used in place of wedges or clamps. Heater strip operated at about 300° F. Average curing cycles are 1 or 2 minutes with CASCAMITE No. 12. (Photos from *Baxter Crafts*, Bronx, N. Y.)

▲ Set-up for edge-banding 3 edges of a table top. Power unit mounted under assembly bench. At right: close-up of power unit showing control switch and multiple taps to control heating speed. (Photos from *Long Island Beauty Supply Co.*, Elizabeth, N. J. Resistance Heaters made by *Washburn Electric Co.*, Englewood, N. J.)

For good glues, and good advice on new equipment to do the job *faster*, call your Borden Glue Man . . . or write to: Technical Service Department, The Borden Company, Chemical Division, Dept. W-81, 350 Madison Avenue, New York 17, N. Y.

Borden's

CHEMICAL DIVISION

Human carelessness is too often the real cause of the fires in woodworking plants. Last year $15 million went up in smoke in our industry. Trained personnel both in fire protection and prevention as well as good housekeeping can keep your plant from being a statistic. The fire brigade pictured is, fortunately, becoming a more familar sight around woodworking plants.

National Safety Council

How Training Cuts Fire Hazards

by P. C. HENSLER

Fire Protection Institute

In crucial times like these, America can no longer afford the luxury of fire waste on the home front. All indications are that last year's total of $688,000,000 will be topped this year.

Two thousand woodworking plants from coast to coast contributed $15,100,000 to the staggering total last year. True to the alarming fire trend, woodworking fire losses had increased over $5,000,000 in one year.

In a recent month alone the industry's partial fire record reads like this: Cardiff, N.J., $50,000; Clifton, N.J., $75,000; Trenton, N.J., $1,000,000; Richmond, Virginia, $28,000; Prescott, Arkansas, $10,000; Malvern, Arkansas, $15,000; Stevenson, Washington, $50,000; St. Jones, Michigan, $70,000 and Defuniak Springs, Florida, $500,000.

Equally important as the dollar loss of over $1,750,000 were the losses in income, manhours of production, skilled labor and other related consequences of fire.

In addition to the fires recorded by fire chiefs and marshals, scores of small "unreported" fires are likely to break out in a plant during the course of the year. They're the ones that are brought under control promptly by alert personnel with approved fire control equipment such as extinguishers.

Fire prevention and fire protection are not synonymous, although both aim at the reduction of loss of life and property as a result of fire. Fire prevention advocates concentrate on avoiding outbreak of fire by stressing the need for fire-resistive materials and "good housekeeping" practices. Fire protection experts support these basic objectives, but point out that many small fires can be controlled and extinguished with relatively little damage through more effective use of Underwriters'-approved fire safety equipment.

All Must Participate

The task of combining both these phases of fire safety into plant routine is not insurmountable. To be successful, everyone from night watchman to board chairman must do his share. Common and special fire hazards must be routed—and corrected immediately upon discovery.

Human carelessness is too often the culprit. To contend with this obstacle, all employees can be educated in proper fire safety habits. Smoking in areas where combustible material is present must be prohibited. Where smoking is permitted, provide ample facilities for cigarette disposal. Many plants provide employees with special "smoking rooms" to eliminate the dangers of "sneak smoking."

Electrical equipment kept in good shape will seldom cause trouble. Reliable manufacturers guarantee their apparatus to perform satisfactorily for years under normal conditions. Therefore, any defects found in electrical units should be corrected immediately upon discovery.

Defective heating plants score high on the list of woodworking plant fire hazards. Steam pipes located too near woodwork, cracked chimneys and corroded flues are sources of many industrial blazes. Isolate trouble spots and repair them immediately. Station an approved fire extinguisher in the vicinity of the furnace for use in emergency.

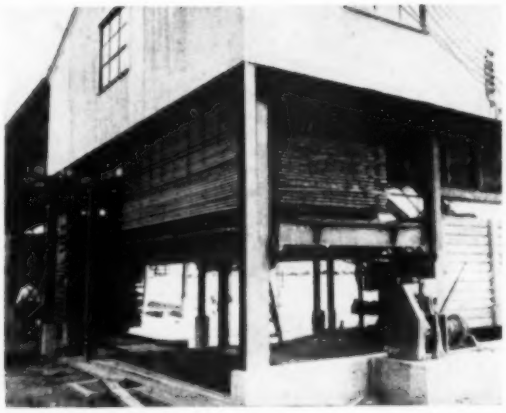
Sparks from grinding wheels and torches require close watching. Try to use this equipment in areas free of combustible materials. See to it that air ducts or blowers are kept free of dust—dust accumulations are easily ignited by sparks.

Good Housekeeping a Must

Good housekeeping is the answer to eliminating many common hazards in the woodworking plant. Combustible materials such as paint supplies, oily rags and grease waddings can be kept under cover, in tightly-closed metal

(Continued on page 62)

1. LANDSCAPING, and paved roads for easy mill access.



2. AUTOMATIC UNSTACKER is in modern building.

How Southern Pine Modernized

Borrowing a page or two from West Coast operations, adding innovations of their own, the Southern Pine Lumber Co., Diboll, Texas, has one of the most modern sawmill operations in the United States.

by C. A. LAWLER
and D. M. BENTLEY
H. E. Bovay, Jr., Consulting Engineers

A long range modernization program was conceived several years ago by the Southern Pine Lumber Company of Diboll, Texas, and a long range plan for a completely modern and efficient lumber manufacturing operation was worked out, through joint efforts of Southern Pine and this consulting engineering organization. A study indicated that the program should be implemented with a plan that embraced several distinct projects. It was decided that the first project undertaken should cover the manufacture, handling and processing of lumber between the sawmill and the existing rough storage facilities.

Ground was broken for the first project on April 1, 1949, and this modernized portion of the mill put into full operation on October 23, 1950. A second project on the addition of a new Rough Storage Building and other facilities is well under way.

In the beginning inspection trips were made to the most modern sawmills in the South and in the Pacific Northwest. The best features of these mills, plus many new and original developments of our own, have been incorporated in Project No. 1. The results are a greater ease of production, improved working conditions and worker morale, increased efficiency, safer working conditions, and a greater production volume of higher grade southern yellow pine and hardwood lumber.

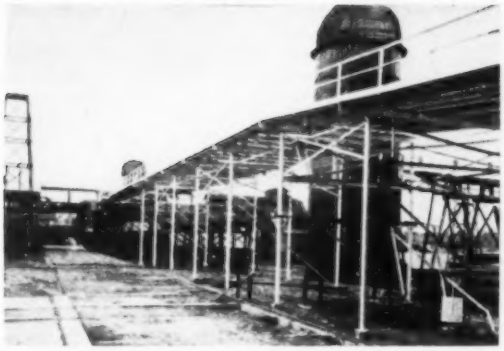
Western Planing Mill

The first innovation with respect to the process was the adaptation by Stetson-Ross of a planing mill trimmer to use as a trimmer at the sawmill. This trimmer was built to specifications and is unique in that, to the author's knowledge, it is the first selective cutting automatic end trimming trimmer of large size to be used in the South. Live rolls carry the entire production of the pine mill edger straight out of the sawmill building onto the accumulation table ahead of the trimmer which can handle stock up to 36 ft. in length. The trimmerman, from his station above the chain, can selectively trim for grade improvement with any number of saws by push button controls. The trimmer feed chain was designed to operate at speeds varying from 80 to 108 ft. per minute, and the trimmer saws, which cut from an overhead position, are actuated by electric solenoids. Saw drive motor is 50 HP and feed table chains with lugs spaced on 29-in. centers are driven by 7½ HP motors. Any board which passes through the trimmer and is not selectively cut for grade is automatically end trimmed. The trimmer is housed in a concrete and steel structure at sawmill floor height and protected against fire by a sprinkler system.

It was necessary to locate the Edge Sorter Building some 230 feet from the trimmer and change the "zero" line, or lumber even-end line, from one side of the flow to the other. Accordingly, a diagonally traveling chain located at the end of the trimmer off-bearing table moves all multiple trimmer cut pieces over to the trimmer zero line; then, the lumber is conveyed and dropped on helix line-up rolls which transfer the lumber to the other side and deposit it properly aligned on the cable edge sorter feed conveyor. The edge sorter feed conveyor is over 200 feet long and consists of six ¾-in. diameter wire cables running over 40-in. diameter sheaves which are supported on a structure 20 feet above the ground, or sawmill floor height. A short section of this conveyor approaching the edge sorter is a chain conveyor and is controlled by foot button by the edge sorter feederman.

Feeding Operation

As the lumber reaches the feeder station of the edge sorter, the feederman turns the boards on edge and feeds them into several slots for further automatic sorting into 27 separations. Feeding of the many closely spaced boards is made easier by the fewer number of slots from which to make a selection, by the foot-controlled "bring-in" section of the feed



3. GREEN LUMBER CONVEYOR with transfer track.

4. DRY KILN operator's building of prefabricated panels.

conveyor, and because all boards reach the separations with the lumber being kicked out into accumulation bays along both sides for the length of the 280 ft. building. Provisions were made so that more feed slots could be added and the building lengthened if more separations were desired in the future. Vertical slot walls which run the length of the building are of steel and surmount a live roll conveyor which moves the boards along at rates up to 15 ft. per second. After feeding, the remainder of the edge sorter operation is entirely automatic. As the boards travel along the rolls on edge they are automatically measured and sorted according to length and kicked off into accumulation bays of the proper length designation.

Special Equipment

This patent mechanism was designed and developed in conjunction with the Southern Pine Lumber Company while the overall design and assembly of the edge sorting facilities were being carried forward. A pilot model was set up in Southern Pine's shops for development and modification. The device consists of a system of limit switches which can actuate an air operated gate to deflect boards at the proper instant. One such device is required for each separation or accumulation bay desired.

The decision to use the edge sorting principle was made in the early planning stages. It was agreed that this commonly used principle was desirable because of its simplicity and savings in manpower to be expected would make the investment pay for itself. The primary purpose of the edge sorting "machine" is, of course, the separation of boards by lengths and thickness; but it has another and no less important function in that it becomes a mechanized accumulation point in the production line. Each sorted bay is capable of storing the equivalent of one and one-half to two kiln cars of lumber. Three to four days' production can, therefore, be stored if necessary, as in a surge tank, with the ability to mechanically move the product back into flow. This flexibility is accomplished by means of mechanized accumulation bays.

In each bay there are separately powered transfer chains or conveyors on which the sorted lumber falls. Running along the edges of the building at the foot of the accumulation bay conveyors are motor driven 30-in. wide belt exit conveyors which move the lumber to the stacking operation at speeds up to 400 ft. per minute. The accumulation bay conveyors and the exit conveyors are controlled by the unloaderman, depending on the size of lumber being stacked at the moment for kiln drying. The accumulation bay conveyors can also be controlled from above the sorting rolls by the deck utility man to move the lumber outward from time to time and make room for more sorted lumber. Since the stacking operation is located on one side of the building, the Edge Sorter includes a cross-conveyor to bring lumber from the off side bays and onto which all belt exit conveyors discharge for feeding to the automatic stacker.

Stacker Location

The Moore stacker is housed in an adjacent concrete and steel building, and has a feed conveyor which ties in with the edge sorter conveyor system. The stackerman has control of the feed conveyor and emergency control of the Edge Sorter belt exit conveyors. The stacker selected was a 30-ton cable lift platform stacker for handling 6 ft. to 20 ft. lumber to kiln loads 8'0" wide by 11'6" high. The machine has the ducking dog type stacking mechanism with 5 carrier and 4 pusher chains, and automatic sticker placers with 11 sticker pockets. All pine production is handled through the Edge Sorter and to the stacker as outlined. Hardwood lumber from the air drying yard is introduced by lift truck onto the cross-conveyor at the opposite side of the Sorter Building for transfer to the stacker. Space and planning was provided for a second stacker for future increase. Loaded kiln cars leave the lowered stacker platform by gravity to a feed track for the Green Transfer.

Transfer on Stilts

Due to supporting soil conditions and terrain, the 307-ft. long Green Transfer is mounted on a reinforced concrete beam and column structure supported on spread footings. The Dry Transfer also has a concrete base designed as a flat slab supported directly on earth and the space between track bases is concrete paved and shaped to serve the additional purpose as a surface water drainway for Cooling Shed and Dry Sorting areas.

As stated previously, the drying facilities at Diboll needed replacing and as rather large steam savings were anticipated, the 18 existing kilns were razed and replaced with 5 double track 26 ft. by 120 ft. and 2 single track 14 ft. by 88 ft. brick kilns. Foundations and steam trap service pit were of reinforced concrete with continuous strap footings. Walls are 12½ in. thick and built of No. 1 common red dry pressed brick with the interior coated with 3 gallons of kilncoater per square. The roofs of the kilns represent a new design and departure from standard practice. The completed roofs have an excellent insulating value to conserve heat and save steam, and the

(Continued on page 61)

TECO

KILN SAMPLING and testing is a science not a make-work task.

More Seasoning Specialists Are Needed in the Industry

Too often the yard man is handling the kilns on a part-time basis, and the charge of lumber proves it after it has gone through fabrication. The need today is for specially trained men to handle the raw material investment at its most vital point—drying. Part One.

by PAUL GRAHAM

Too little consideration is still being given to the importance of proper dry kiln operation. At a large woodworking plant recently visited a battery of modern dry kilns, with a capacity of upwards to 200,000 board feet of lumber in a single charge, are being operated by the yard foreman. On days when incoming lumber shipments are heavy, he is unable to get to the kilns during the day as he has to inspect all lumber received and direct its handling and stacking.

When these new dry kilns were first installed, this foreman remained after regular working hours to sample and test the progress of the various kiln charges. The pressure of this added work proved too much for him, however, and after he had returned to work from an illness brought on by overwork, it was decided to operate the kilns by set schedules with intermittent sampling and testing being done during slow period in the yard. All controls were changed at regular prescribed periods and the lumber was pulled from the kilns after the lumber had dried or remained in the dry kilns the required number of days per schedule.

Top Equipment; Part-time Help

Top management of this plant has the reputation in the trade of being keen business men, progressive-minded and possessed of good sound judgement. They have invested thousands of dollars in modern dry kilns equipped with the most up-to-date automatic controls and the best possible testing equipment. Still they seem perfectly satisfied to have these kilns operated by a part-time operator without regard to kiln drying degrade or inefficient kiln operation.

They have provided every production machine in their plant, which work on materials representing values in hundreds of dollars, with a specially skilled operator. But for the dry kilns, which handle up to 200,000 board feet of lumber with a base value of from $50 to $185 per thousand board feet, they consider as perfectly adequate a part-time operator who not only cannot operate the kilns on a full-time basis but also has little technical knowledge or training in the science of kiln drying.

This is by no means an isolated instance, as can be attested by kiln drying engineers, consultants and others whose work brings them into contact with kiln drying operations throughout the woodworking sections of the country. All can and do tell of similar or more pathetic cases.

In a millwork and store fixture plant where four double dry kilns of modern design are operated, a kiln drying engineer called in to find out why drying schedules were excessively extended found their operation was entrusted to the plant fireman. He seemed to be of the opinion that the prime purpose of the kilns was to keep him busy and to use up surplus steam. When he felt too tired or was having trouble keeping up steam, he just shut the kilns down until he got rested or had worked up another good head of steam.

In another plant the dry kilns were under the direct supervision of the rough mill foreman. When his cutting crew complained that casehardened lumber was too hard to cut, he changed the drying schedule to permit lumber to be removed from the kilns at a moisture content of 15 percent instead of the prescribed 8 percent. When this procedure failed to solve his cutting problems, he then steamed all lumber for 48 hours at the end of the kiln run and the cutters worked the lumber while it was still wet. Fortunately complaints throughout the plant regarding the condition of the lumber called management's attention to the fact that something was decidedly wrong and outside help was called in to solve the problem.

Avoid Management Pitfalls

In many plants, management undertakes to supervise the dry kiln operation. This may be good sound procedure where a competent dry kiln operator is available who will follow instructions. In one plant, however, the general manager attempted to make all tests, police the drying schedules, change controls and attend to all the other details himself. It took a year's experience with an analysis of degrade and actual usable footage of lumber to convince him that effici-

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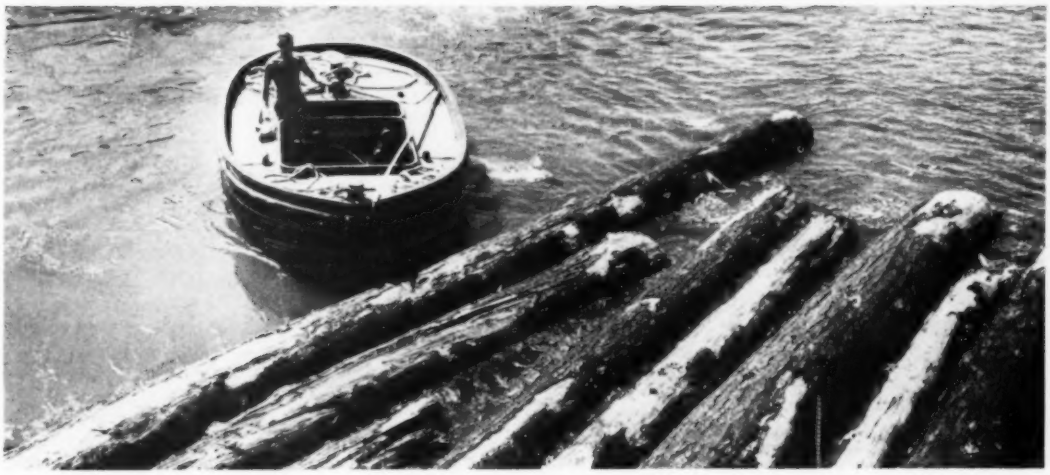


Water 'Dozer Speeds Log Pond Booming

Log pond work has been time-consuming and hazardous. Now, with a swift, 100 HP water 'dozer (pictured above and on the cover) to shunt the sinkers as well as the floaters into position, this phase of sawmilling is speeded up. Weyerhaeuser men at Longview, Washington get the credit for introducing this "log herder" into U.S. West Coast operations. Al Arnst at Weyerhaeuser's Tacoma office is the author.

One hundred horses hitched to a sixteen by eight foot steelshod package of stalwart Douglas fir.

That's the power-packed description of a new-type water craft which is winning admiration of old-time boom men in the logging industry. The husky newcomer is literally pushing its way around in the closed fraternity of proud river men—and getting away with it.

When logs fresh from the forest are dumped into log ponds, they immediately become a vexing problem ing water transportation. They must be guided into various lanes for mill consumption at integrated wood processing centers, shunted directly to the log haul of a sawmill or bound into rafts for further transportation. It takes the sweat and back-breaking strength of many agile boom-men, perched on the above-water log side, to guide the bobbing logs into place with pike poles. Some of the heavier species, like hemlock, also have a bad habit of sinking. The log jostling problem is aggravated where river currents, tides or stagnant waters work against the combined efforts of a large crew of these sure-footed calk-booted log "herders."

In early 1949, millmen at Weyerhaeuser Timber Company's Longview, Wash. branch operation decided to short-cut this important milling operation. They knew that Harold C. Hanson, Seattle naval architect, had designed a boat for "log-herding" use on the Frazer River in British Columbia. Arrangements were made to obtain a set of plans from him.

The specifications for such a boom boat were tough. It had to be small to work in close quarters, of extremely rugged construction, generously powered with a dependable engine and so maneuverable that it could best the efforts of several men with pike poles.

Double Construction

To construct such an unusual craft, the Longview millmen selected the Ilwaco Boat Works at Ilwaco, Washington. Howard Gerttula, boat works owner, went to work on the plans—and his results since then have more than repaid the fondest hopes of the men interested in a new marine craft.

Gerttula knew the rough service required for such a craft and built accordingly. As he remarked, "I built it as ruggedly as for a vessel ten times its size." Nearly all of the frame material was of native Douglas fir, specially cut, selected and partially kiln dried. Air seasoning at Ilwaco finished the curing process. The keel was shaped from 12 x 16 fir and the frame from four-inch flitches of fir timber.

Over the heavy fir ribs was placed a double planking of one-inch white oak and over this a sheathing of one-eighth inch steel plate. The bow stem was fashioned from tough iron bark wood from Australia. The iron clad hull is not only a protection against hard everyday service but also equips the boat for ice-breaking service.

Finished, the boat was sixteen feet long with an eight foot, three inch beam. It drew 43 inches of water and was built low in the water so that the operator could jump out onto logs when required. The low flat open deck is a convenient working platform and also permits ready clearance under overhead walkways or other obstructions.

100 HP Power Plant

The power plant in the the first boat and succeeding models is a 100 horse-power marine engine, connected to the propeller shaft through a reduction gear and hydraulic reverse gear. The 26 inch propeller is pro-

(Continued on page 62)

INSPECTING lumber as it comes from the car.

Lumber Grading Quiz

How many of these questions can *YOU* answer without sneaking a peak at the answers given below. They were prepared for student use by one of the outstanding educators in the industry who has come up with a fair share of right answers in business, too.

Part One.

by NELSON C. BROWN
Dept. Forest Utilization
New York State College of Forestry

1. *Question. What is a lumber grade?*
   Answer. It is a specification of quality developed through custom and practice for general usage. The end use may be specific, such as flooring, ship decking, car decking, scaffold plank, etc., or as sheathing, siding, sub-flooring, or as dimension and structural timber such as rafters, joints, etc.

2. *Question. What are the three broad classes of softwood grades from the standpoint of use?*

   Answer. 1) Yard lumber, which greatly predominates in volume production, consists of those grades, sizes and patterns which are generally intended for general construction and home building. It is so named because it is usually carried in stock by the retail lumber dealer and is intended to be used without further remanufacture.
   2) Structural lumber which is two or more inches in thickness and width intended for use where structural strength is required.
   3) Shop and factory lumber which is graded according to the number of clear, sound cuttings that will accrue in further remanufacture.
   The relative importance of grades among the softwoods and hardwoods is shown in the following table:

Classes of Lumber	Percentage
Softwood Yard Lumber	70
Hardwood Factory Lumber	14
Softwood Structural Lumber	9
Softwood Factory Lumber	3
Hardwood Structural Lumber	3
Hardwood Yard Lumber	1
	100

   Hardwood factory lumber is graded according to area of clear face or sound cuttings.

3. *Question. What is the basis of grades?*

   Answer. The grade of lumber is based on the number, character, and location of any irregularities occurring in or on wood that may lower some of its strength, durability or utility values. Generally it means the absence or presence of natural or manufacturing characteristics, blemishes and defects, which may affect the appearance and/or the utility of the product for intended use.

4. *Question. Why do we grade lumber?*

Answer. The purpose of lumber grading is to sort lumber into different types of utility value so that all pieces in the same grade will represent the same value and can be used for the same purposes irrespective of the type of log, timber or the mill from which they were produced. Thus flooring from one mill will match flooring from another mill of the same grade. Therefore lumber is graded:

a) To sort the product of the log into different types or classes of utility value.

b) To standardize the product of each species between the various manufacturers.

c) To provide a written description of quality of various grade items for convenient understanding of the graders and all others concerned with manufacture, shipping, retailing, specifying and use.

5. *Question. Who makes, determines and publishes books on the grading rules?*

Answer. The regional manufacturers' associations for softwoods. For example, the *West Coast Bureau of Lumber Grades and Inspection* of Portland, Oregon, establishes grades for Douglas fir, West Coast hemlock, Sitka spruce, Western red cedar and Port Orford cedar. The *Southern Pine Inspection Bureau* of the Southern Pine Association, of New Orleans, establishes rules for the southern pines, namely longleaf and shortleaf pines, for both the export and domestic trade. The *Western Pine Association*, of Portland, Oregon, publishes rules for the three western pines, ponderosa, Idaho white and sugar pine; also for species associated with them such as white fir, Douglas fir, western larch, Engelmann spruce, lodgepole pine, western red cedar, and incense cedar. The *Northern Pine Association*, of Minneapolis, the *Northern Hemlock and Hardwood Manufacturers Association*, of Oshkosh, Wisconsin, and the *Northeastern Lumber Manufacturers Association* of New York City, publish grades for northern white pine, Norway pine, spruce and balsam fir. The *Appalachian Hardwood Manufacturers Association*, of Cincinnati, and the *Northern Hemlock and Hardwood Manufacturers Association*, of Oshkosh, Wisconsin, publish rules for eastern hemlock. The *California Redwood Association*, of San Francisco, publishes rules for redwood. The *Southern Cypress Manufacturers Association*, of Jacksonville, Florida, for southern cypress. The *National Hardwood Lumber Association*, of Chicago, which is a vertical association comprised of manufacturers, wholesalers, exporters and distributors of hardwoods and cypress, establishes the grades for these species.

Sizes in relation to grades of softwoods conform to those established by the American Lumber Standards Committee of Washington, D. C.

6. *Question. Who checks up and settles disputes about grades?*

Answer. In the absence of any contrary agreement in the sales contract, disputes about grades are settled by official inspectors of the inspection bureaus of the above associations.

7. *Question. What is an Inspection Certificate?*

Answer. This is a certificate or affidavit issued by the various associations certifying as to grade and tally. The certificates of the Inspection Bureaus of these associations are widely recognized and accepted in all branches of the trade as well as in the export business.

8. *Question. What are the principal softwood grades?*

Answer.
B and Better
C
D
No. 1.
No. 2
No. 3
No. 4
No. 5

9. *Question. What are the hardwood grades?*

Answer.
Firsts and Seconds
Selects
No. 1 Common
No. 2 Common
Sound Wormy
No. 3A Common
No. 3B Common
There are also special grades applying to some species defined in the Rules Book.

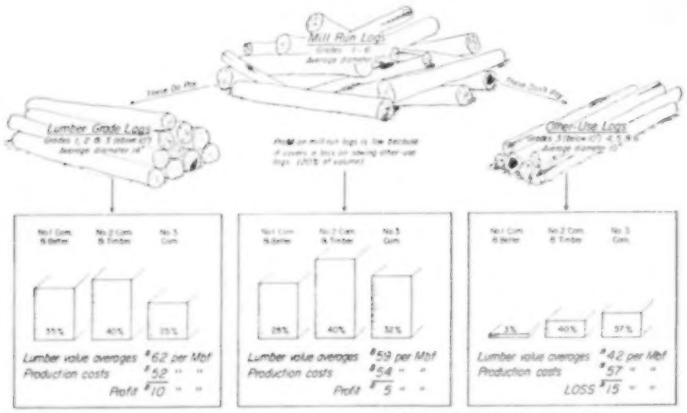
10. *Question. What are the grades found in the principal items of a dwelling?*

Answer. This varies with the local custom and usage in different parts of the country, depending on the type of construction and partly on climate. For the Northeast, for siding, Select grades are used; for sheathing, sub-flooring and roof boards, No. grades are generally used. For flooring, Clear and Select for the

(Continued on page 52)

*How To Boost Lumber Values and Profits**

SAW THOSE LOGS THAT PAY THEIR WAY


Mill Run Logs
Lumber Grade Logs
Other-Use Logs
Lumber value averages $62 per Mbf
Production costs $52 " "
Profit $10 " "
Lumber value averages $59 per Mbf
Production costs $54 " "
Profit $5 " "
Lumber value averages $42 per Mbf
Production costs $57 " "
LOSS $15 " "

PROFITS from "lumber grade" logs, "mill-run," and "other-use" logs compared.

* Based on 2,850 Red Oak Logs Sawed at Study Mills

Buy the Right Sawlogs

Lumber can be no better than the log from which it was sawed. The results of the TVA study on red oak show the close relationship between logs and lumber. Small logs don't mean small profits, they generally mean good losses.

by W. N. DARWIN
and A. K. THURMOND
TVA's Div. For. Rel.

Sawmill profits are measured by the spread between the sale price of lumber and the cost of producing that lumber. This means one can increase profits in two ways—by raising lumtake a look now at how one can raise the value of that lumber.

In general, the sale price of green lumber depends on the kind of log it comes from, and how it is sawed. This points up two things a millman can do to raise lumber values: (1) Buy the right sawlogs. (2) Saw quality lumber.

Buy the Right Sawlogs

The right sawlog is one that will yield a profit, or one that contains lumber worth more than the cost of producing it. One problem, then, is how to pick the logs that will make high-value lumber at low cost, and how much you can afford to pay for them.

During this mill study information has been collected on nearly 10,000 logs. These logs represent about a year's supply for the average mill. All were graded by size and quality using methods developed by the U. S. Forest Products Laboratory and the Southern Forest Experiment Station. Each log was followed through the mill and tallied the lumber by grade and dimension. In all, over 540,000 board feet was graded by NHLA and SPIB standards. Values for the logs were then figured by subtracting production costs and a fixed profit margin from the market value of the graded lumber.

The study clearly showed that lumber values depend on two things: log size and log quality. The larger the log and the higher its quality (freedom from defect) the greater the spread between lumber values and costs, the more one can afford to pay for logs and still make a reasonable profit.

Look at the effect of size on log and lumber values. Using red oak as an example because it is the major species sawed in the Tennessee Valley. Here are the facts based on nearly 3,000 red oak logs sawed into boards at the study mills.

These figures show that lumber values go up as log diameters increase. Lumber from 18-inch logs is worth more than twice as much per thousand board feet as that from 6-inch logs. Costs drop too as larger logs are sawed, so the chance to make a profit is still greater and one can afford to pay more for logs. One can't afford to saw 6-inch logs at any price; one would actually lose about $20 a thousand even if they were given to the operator. On the other hand, one can pay $40 for 18-inch logs and still make a 20 percent profit. If one is paying $30 a thousand (the average price found in this study) then the hardwood logs should average 14 inches in order to yield a 20 percent profit.

Many operators insist on sawing small logs, thinking that overrun gives them a profit margin. Overrun from small logs is considerable (Doyle Rule), but the lumber obtained from them is mostly No. 3 Common, worth less than the cost of production. The fact that an operator stays in the black is no proof that he makes money on all sizes of logs. A profit of $10 a thousand may cover a loss of $2 on small logs. He might have made a profit of $12 if he had cut only the larger trees and left the smaller ones in the woods for growing stock, or for use other than lumber.

Log quality also has a marked effect on lumber values. Lumber can be no better than the log from which it is sawed. Logs are usually priced on the basis of how much No. 1 Common and Better lumber they will yield. The smart buyer knows that No. 2 Common lumber is oftentimes worth less than the cost of producing it, and that No. 3 Common is always worth less. This means he should be able to look at the log and pretty well

(Continued on page 56)

Effect of Log Size on Log and Lumber Values*
Red Oak

Log Diameters Inches	Lumber Values	Production Costs	Fixed Profit 20%	Log Value
			Per Mbf.	
6	$32	$53	$ 7	— $28
8	44	36	9	— 1
10	52	28	10	14
12	59	24	12	23
14	65	22	13	30
16	70	18	14	38
18	73	17	15	41

*** February 1951 prices to nearest dollar for rough green 4/4**

Employing Women in Furniture Plants

With the draft blowing hot and cold, and defense contracts becoming more important, the stage is set for a return of the distaff side to the personnel roles. Here's what can be expected.

by JOSEPH HALPERIN

The hiring of women had a tremendous impact on war production in the last conflict and more than justified the loss in skill as mass production replaced the finer cabinet work of civilian goods. The machinery in use today can very effectively be operated by women and there is hardly any machine or operation in the modern furniture factory where women cannot be effectively put to use. Even to the unloading of lumber from freight cars women have done valuable service. Slowly the predjudice against having women at these various machines were worn away although it took a major crisis to produce the revolution.

Two-thirds as Efficient

The overall picture of women efficiency is about at a 65 per cent rating. This of course is applicable to the furniture field only and in no way to be constructed as any basis for fact in other industries. However, England during the war years found a similiar picture in the total production of all industries.

Women have been found objectionable because of several factors:

1. Skill and Training. The break in period has been found to be of greater length among women employees. While slow in learning they are much more skillful in operations requiring finger movements. However in the years that we employed women we have yet to have one girl qualify as a set-up man. They remained in the category of semi-skilled personnel.

2. *Effort.* In certain trucking and lifting operations a woman employee needs help so that it takes two people whereas one male employee would have ordinarily done the job. In jobs where they are steadily employed they are always considered the "weaker" sex and provision is always made for extra help.

3. Absenteeism. Women and especially married women have a high absentee record. This is a natural situation but where production schedules must be kept up this absenteeism has a very disturbing effect. Also, married women who have working husbands do not feel so tied down to a job. They have an independent attitude and will take advantage of the situation.

4. Romance. This is a very important angle. Where women are in a department with men there are bound to be romantic attachments.

5. Production Quotas. As mentioned previously women lag in production quotas as compared to male production. The above points are a brief summary of why women are hired as a last resort.

On the other hand women are hired for reasons such as:

1. Help Shortage. Women are hired because they are needed to plug production gaps. In a tight labor market any production is better than no production and although costs rise with inexperienced help, in a crisis costs matter little.

2. Lower Pay. Women have a lower base pay than men. Married women generally earn money for the extras while men need theirs for the family support. Most unions do not press equal pay too hard as they recognize the production differential.

3. Modern Machinery. More and more we find machinery being designed for automatic or semi-automatic use. Indeed work simplification has been a primary goal of machine manufacturers with very definite progress.

War production and civilian production present entirely different problems. The author's firm has been through both periods and the experience factor has been definitely in favor of male help.

Prior to 1942, there was no question whatsoever of women being employed in the mill. However from a working force of 300 the firm gradually was reduced to a bare 75 of which one-third were women.

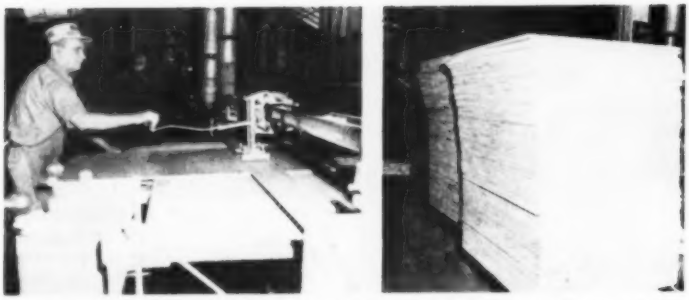
Good on Routine

In the war program the company made heavy equipment. As a result, machine hands were put on to this work while the women were gradually broken in on machines. Offbearers of the tennoner and drum sanders were the easiest to break in help. Slowly over the period of months women were placed on routers, moulding sanders, drum sanders, boring machines, assemblers, packers, and finishing room help.

In breaking in women on the routers a great deal of patience had to be expended. They would be producing at a fairly good clip and when another pattern was used it was almost necessary to start all over again. As time went on they became more familiar with their work and a steadily increasing production was found. However, a lot more maintenance and supervision was expended. The girls, it seems, lacked a definite mechanical sense, but, with proper supervision they were able to keep up their preset quota.

Women soon became a familiar sight and found their way into the cabinet department for light assembly work, the finishing room in wip-

(Continued on page 60)



Stroke sanding a wide furniture panel having a redwood core. Note the shaped edges of the stacked redwood core panels in the picture at the right.

Redwood Core Stock

One of the toughest problems facing furniture men today is the selection of proper core stock for furniture panels. Redwood is being used very successfully in some of the toughest core stock applications. Here's the performance record.

by JOHN RENO
Industrial Engineer
Pacific Lumber Co.

This report, of particular importance to furniture and panel manufacturers, covers about two years of research work done at the Forest Products Laboratory to develop information relative to the use of redwood cores in furniture panels. It reveals that vertical grain redwood compares more than favorably with yellow poplar in the production of panels with smooth faces and without noticeable warpage.

The need to augment the supply of lumber suitable for lumber cores for high-class furniture panels has resulted in numerous investigations into the merits of various species for this purpose.

Because the properties of redwood conform with many of the requirements of good core material, the Forest Products Laboratory, in conjunction with The Pacific Lumber Company, Scotia, California, undertook to determine if redwood met all the essentials of a top-notch lumber core.

For the benefit of those unfamiliar with the properties of redwood it can be stated that this species is the most stable of American commercial woods; that is, it shrinks and swells less than any other American wood in response to moisture changes.[1] This means there is less chance of warpage in panels with redwood cores.

As the result of previous government tests and commercial experience, redwood has been placed in the top class as one of the woods which glue easiest and best.[2]

The machining of redwood is discussed in Forest Products Laboratory Report No. 1755, entitled "Shaping End Grain of Redwood."[3] This report discloses that the end grain of redwood shapes even better than does yellow poplar. Recommended shaper speeds, knife grinding, etc., are given in the report.

Redwood takes a fine finish and the edges can be made to simulate the appearance of face panels of mahogany, walnut, etc.

Redwood Research

As yellow poplar is the wood generally used for lumber cores for high-class furniture panels, this species was chosen as the one with which to compare redwood in these tests. Seventy-six 5-ply panels with yellow poplar crossbands and birch face veneers were constructed with redwood and poplar cores.

Vertical grain and flat grain redwood cores made with boards of various widths, 2 in. to 10 in., some with combination sapwood and heartwood and some with only heartwood, were compared with flat grain yellow poplar cores built with 2 in. and 4 in. strips. Both redwood and yellow poplar were dried to seven percent before being edge glued, and after gluing were reconditioned to the same moisture content before applying crossbands.

The panels were constructed of these cores ¾ in. thick and 1/20 in. yellow poplar crossbands and 1/28 in. birch face veneers conditioned to a moisture content of four percent. After assembly, some by hot-press and some by cold-press gluing, the panels were reconditioned to seven percent moisture content. After being weighed and measured for width, length, and thickness, as well as for cup in width and bow in length, and for twist, they were shipped to a furniture factory for sanding, staining or bleaching, and a high gloss finish. The panels were then returned to the Laboratory, weighed and measured, and placed in a conditioning chamber whose temperature and relative humidity were adjusted to obtain a wood moisture content of six percent. After attaining a moisture content of about six percent, the panels were weighed and measured and placed in a room with controlled humidity until their moisture content was about ten percent.

After being weighed and measured at this moisture content condition, the panels were again brought back to a moisture content of six percent. The panels were placed on edge within a rack in the conditioning chambers, so that they were free to swell or shrink, and warp. At 10 percent and at the final six percent moisture equilibrium condition, the top face of each panel was viewed for surface irregularities by directing a beam of light along the panel at a small angle with the face. A white background was also used to make the depressions and ridges more easily observed. The faces of 12 selected panels were photographed at both 10 percent and six percent moisture content, against a reflective background containing diagonal lines.

These fluctuations in moisture content represent about what could be expected under normal use conditions.

The faces were observed critically to judge their comparative quality as high-class furniture panels.

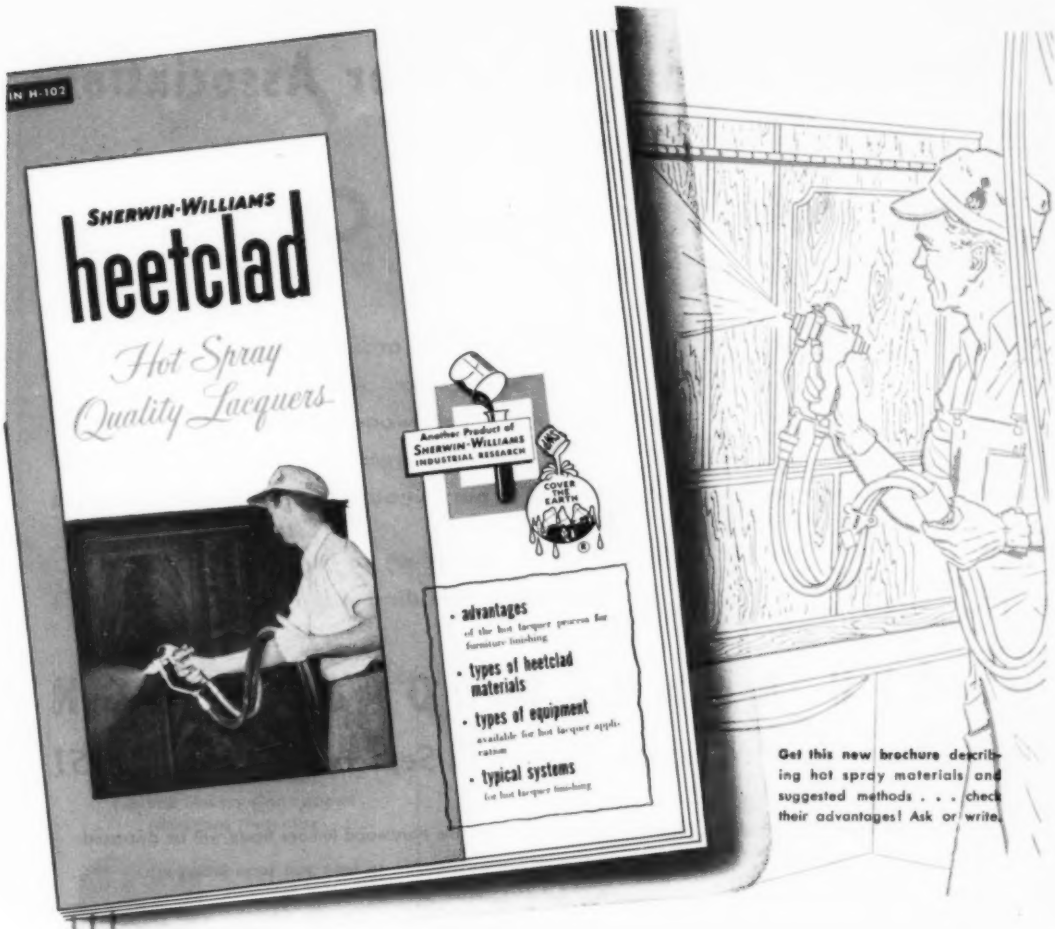
The panels which remained the flattest and smoothest were those made with cores of Clear all-heartwood vertical grain redwood boards 8 in. and 10 in. wide.

(Continued on page 38)

1. *"The Wood Handbook" of U. S. Dept. of Agriculture, Rev. issue of 1940, Page 196.*

2. *"The Wood Handbook" of U. S. Dept. of Agriculture, Rev. issue of 1940, Page 169.*

3. *A digest of this report appeared in the April 1950 issue of "Wood" and is available in reprint form.*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- Where to use them
- How they save on finishing costs

Does hot spray application offer worth-while advantages in your furniture finishing operations? What are the types of hot spray materials available and what are their properties? Why are special formulations desirable?

You'll find helpful information on these and other questions on this important development in this new Sherwin-Williams brochure. In addition to discussing where and how the hot spray process can be used to advantage, it includes specifications on two lines of Sherwin-Williams lacquers specifically adapted for hot application, together with representative hot lacquer finishing schedules.

If your operations include the finishing of furniture or wood products, you'll want this data on Heetclad Lacquers. Ask your Sherwin-Williams industrial representative for a copy or write The Sherwin-Williams Co., General Industrial Division, 101 Prospect Ave., Cleveland 1, Ohio.

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National Hardwood Lumber Association

"What Goes On?"

- **Uncertainties are growing in size and number.**
- **Will it be inflation or deflation?**
- **How is the hardwood market going to react?**
- **What about government controls?**
- **How much hardwoods will the government need for defense?**
- **What is happening to the furniture trade?**
- **What about building volume for the future?**

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Sherman Hotel, Chicago, *September 25-27, 1951*

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No lumberman interested in producing, distribution and consumption of hardwoods can afford to miss this vitally important Convention. Come as a member, but if you are not a member, you will wish to be, so that gap can easily be filled. But member or not, come and enjoy the NHLA hospitality and fellowship. Hear the splendid speakers. See this great hardwood industry in action.

Lee Robinson, President ***John W. McClure, Exec. Officer***

59 East Van Buren Street

Chicago, 5, Illinois

NATIONAL HARDWOOD LUMBER ASSOCIATION

New, Automatic Continuous Moisture Detector

Here's a completely new device which stops costly moisture trouble before it starts, helps you manufacture better products—more profitably!

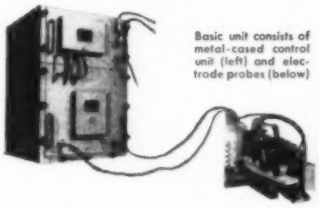
Photo shows installation with automatic marking device. Red ink is placed on all stock containing more than desired moisture content.

NEW LAUCKS SENTRY Continuous Moisture Detector gives automatic, continuous production-line control of veneer or core stock moisture content—*before assembly*.

Built to meet rugged service requirements, Laucks Sentry is installed on present production equipment, operates at normal production speed, does not interrupt flow of material, requires no special operators.

Completely accurate, completely dependable, this remarkable new device can be adapted to virtually any manufacturing process in which moisture is a problem. The head of the Pacific Northwest furniture manufacturing plant in which Laucks Sentry was use-tested for over a year reports that it "paid for itself in less than six months." Other installations are being made in plywood and pulpwood plants and an adaptation is being developed for use in connection with kiln dried lumber at large sawmills.

Quick Facts About Laucks Sentry Continuous Moisture Detector



Basic unit consists of metal-cased control unit (left) and electrode probes (below)

- Gives 100% automatic, positive continuous detection of moisture in veneer, core stock, pulpwood, lumber or other material in which moisture is a problem.
- Is a production machine—not a hand operated meter.
- Does not impede or slow production.
- Can be used on any wood species. Sensitivity: 0.1%. Can be set to check any moisture content common to woodworking practice.
- Will detect moisture regardless of where it occurs in material.
- Can be arranged to mark excessively wet stock, ring bell or activate automatic kick-off.
- Installed by factory-trained technicians. Requires no special operators — your present personnel can operate it after 5 hours instruction.
- Use-tested for over a year. Developed by Research Foundation of West Coast plywood industry.

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Don't take our word that a Disston is just about the finest cutting tool that's ever come your way. Ask anyone who has ever handled a Disston. Then see your Disston Dealer. He'll let you try out one of these beauties for yourself. Once you feel that steady power safely under your command and effortlessly guide the chain through a cut, you won't rest until you own one of these time-saving money-makers yourself.

Don't forget, Disston also makes the powerful DH-120 12-hp Two-Man Extra Duty Chain Saw . . . a favorite the world over.

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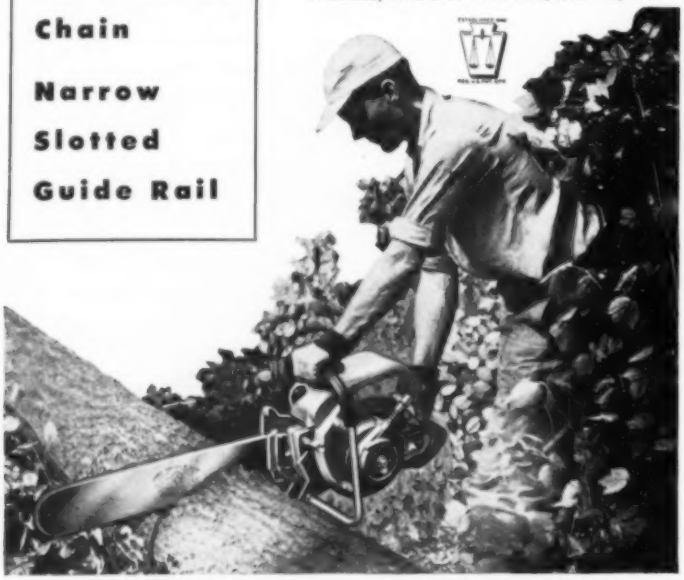

THE DO-101 ONE-MAN SAW. 2-cycle, single-cylinder engine. Positive action clutch. Instant-starting, self-rewinding Magnapull Starter. Automatic chain lubricator. Fast-cutting "DF" chain and slotted profile guide rail in 20", 26", 32", 36", 40" lengths. Also available are 18" and 24" rails with straddle type chain and 15" bow saw for speedy bucking and limbing. Helper handle available for two-man operation.

(Continued from page 34)

Also, vertical grain redwood boards 4 in. to 10 in. in width—both all-heartwood and mixed heartwood with sapwood—produced flatter panels than those made with cores of yellow poplar strips, and had equally smooth or smoother faces.

Although panels made with flat grain redwood remained flatter than those with poplar cores, the faces were not so smooth. More ridges and grooves developed in the panels with the flat grain redwood cores.

These tests confirmed commercial experience, which will be discussed further on, that the best redwood core is made with vertical grain boards in a Clear Heart grade, and that for all practical purposes similar boards on which sapwood appears produce a satisfactory core.

Flat grain redwood, either with or without sapwood, is suitable for cores only for panels on which ridges and grooves of varying magnitudes are not objectionable.

Reference to the previously mentioned FPL Report No. 1755 will show that the end grain of vertical grain redwood also machines or shapes better than does the end grain of flat grain redwood or yellow poplar.

Panels made with hot and cold presses remained approximately equally flat.

The hot-glued panels had higher quality ratings, based on face ridges and grooves, than the cold-glued panels, although the difference was probably not important from a commercial standpoint.

Commercial Experience

Redwood has been utilized as cores for hardwood furniture panels for more than 25 years, although during this period the redwood used was not specifically produced for core purposes.

During the approximate two years that the Forest Products Laboratory was conducting its redwood core research, but entirely independent of that project, one of America's highest-class manufacturers of a quality furniture item had proceeded on his own volition and was procuring vertical grain redwood lumber cores from The Pacific Lumber Company, to the extent of hundreds of thousand of feet.

These cores, including about twenty thousand ranging in sizes from 46 to 54 in. by 33 inches, were placed in the most critical of the panels in this manufacturer's line and have given amazingly satisfactory results: not one

(Continued on page 58)

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OK THIN PLANER KNIVES, are heat treated for absolute uniformity, both in hardness and temper. Made of special steel.

OK No. 4 — special type, high speed steel for wood-working. Easily withstands heat of fast heavy speeds on rough, knotty sandy lumber. Retains keen edge for long runs — gives perfect finishes.

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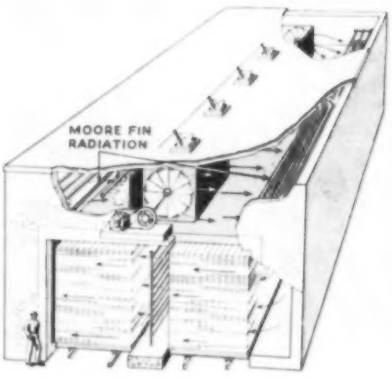
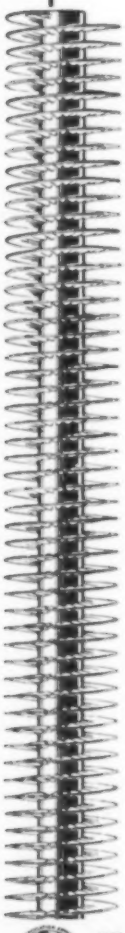
WORLD'S LARGEST EXCLUSIVE MANUFACTURERS OF KNIVES





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Moore-Fin Radiation makes a better kiln heating system because this special pipe has many times the radiating efficiency of ordinary plain pipe. The result:

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Get the Facts, and You'll Get A Moore Cross-Circulation Kiln.

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MOORE DRY KILN COMPANY

Oldest and Largest Manufacturers of Dry Kilns and Veneer Dryers

JACKSONVILLE, FLORIDA · BRAMPTON, ONT., CANADA · VANCOUVER, B. C., CANADA · NORTH PORTLAND, OREGON

WOODS (Continued from page 6)

most abundant in tropical and sub-tropical regions. The best known are mulberry, figs, Osage orange, iroko, snakewood and fustic. TROPHIS is found in the West Indies, Central America and in Western South America to Peru.

The best known species is T. racemosa. The timber is used locally but it is valued mostly for the foliage which makes excellent fodder for donkeys, horses and oxen.

The heartwood is dark brown with somewhat the appearance of elm. The sapwood is lighter in color. The wood is tough, strong, hard and heavy. It is of medium texture; grain straight to irregular, works without difficulty and finishes smoothly.

MORILLO was an import on an experimental basis in 1951. It is doubtful that it has any future either as veneer or lumber.

Other names:

RAMOON—English
RAMON—Spanish
RAMON DE CABALLOS—Cuba
RAMON DE BESTIAL—Santo Domingo
WHITE RAMOON—British Honduras
MORILLO, OJOCHE, MACHO—Panama

EAST AFRICAN OLIVE—Olea hochstetteri
Oleaceae (Olive) Family

The Olive family contains some 25 genera and over 400 species widely distributed mostly in the Northern Hemisphere. Best known are the ash tree and Olea europaea that produces the olives and the olive oil of commerce. The EAST AFRICAN OLIVE reaches a height of 90 feet in the rain forest of Kenya Colony.

The wood is highly decorative, a light brown marked with irregular dark gray veins or streaks of varying widths. The grain is slightly interlocked, the texture is fine and even. The wood is strong, hard and heavy. Sp. gr. 0.80.

The wood is difficult to work by hand and is resistant to cutting machines. Owing to its oily nature it does not have the dulling effect on tools that might be expected.

WOODICTIONARY

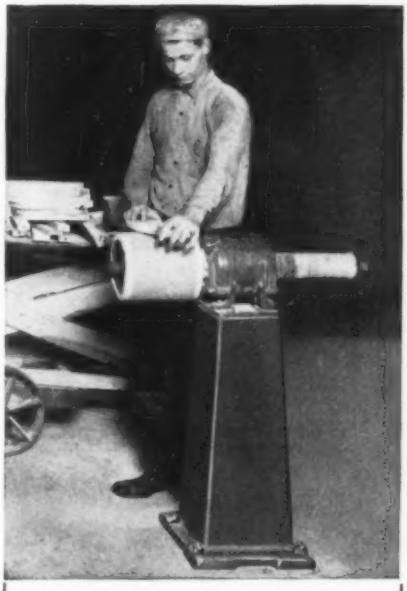
DOGGER

Man who operates the dogs on the sawmill carriage. The dogs hold the log firmly in position on the carriage.

Dwg-So Pine Assoc.

2 sturdy "Oliver" Drum Sanders

They save valuable time smoothly sanding curved and odd shaped pieces



"We use your No. 281 Sander in our frame factory, and find it satisfactory from every standpoint. It is capable of producing quality work for which our products are noted. We recommend the No. 281 Sander to any factory for a similar line of work."

Sealy Mattress Company
Houston, Texas

"Oliver" No. 281-D DOUBLE END DRUM SANDER

This "Oliver" Sander rapidly sands curved parts of chairs, tables, etc., where the grain runs lengthwise. A large drum — solid or pneumatic — is used for large curves, a small drum for small curves. The inflated rubber casing is protected against wear by a canvas slipover. This Sander uses drums 9 inches long, from 2 to 8 inches diameter. A sanding cob 6 inches long, 1 inch diameter can be attached to end of spindle. Push button control is mounted on front of machine. Has wide floor base on heavy cored column. Accurately ground and balanced spindles run in frictionless ball bearings. Offered with choice of three motors: 1200, 1800, 3600 r.p.m. Write for Bulletin No. 281-D.

"Oliver" No. 282-D VERTICAL DRUM SANDER

Smoothly sands curved stock where grain runs lengthwise the curve. Left hand motor carries drums 2" to 6" diameter; right hand motor carries drums 6" to 10" diameter. When slightly inflated, drums conform to any convex curve; when fully inflated drums are adapted to sanding concave curves. Motors have push button control. Write for Bulletin No. 282-D.

OLIVER

OLIVER MACHINERY COMPANY

Established 1890 — GRAND RAPIDS 2, MICHIGAN

Air Compressor Care

By JOHN E. HYLER

One of the most important uses for air compressors is with paint spray guns. It must sit level to operate to best advantage, and should be kept properly oiled. Too little oil is bad, too much may be worse. Oiling instructions must be followed carefully. Temperature of air is definitely raised in process of compression. If too much oil is used, or if a type of oil is used that gets by the pistons and fouls the valves, it will often carbonize, with the result that valves will not close tightly.

The net result will be what is known as blow-by. Air forced through the valves on the compression stroke will leak back through as the piston is drawn back. On the next compression stroke the same air will again be compressed, raising its temperature that much higher. In some cases of this kind, carbon deposits on valves actually become incandescent. Some oil vapor finds its way into the receiver under such conditions. If a bit of incandescent carbon breaks loose and is carried into the receiver when compressed oil vapor is present, an explosion results.

If reasonable attention is given maintenance, one is secure against air-compressor explosions. In addition to following oiling instructions carefully, maintenance man should examine valves periodically. Replace them with new valves if they are warped, or if they have heavy carbon deposits. If they allow any appreciable blow-by, replace them, and always have a spare set on hand. Attach a maintenance card to the air compressor, and put down the date each time it is checked, so it will not be neglected.

All air contains some moisture. The higher its temperature, the greater its affinity for moisture. If one can set the air compressor against a north outer building wall, and let the intake pipe through the wall, coolest air naturally available will be taken into the machine. In consequence lowest possible amount of water vapor will be contained in it. It is also well to provide a hood over air intake, and to let the intake pipe terminate in a *down* leg. Thus no dirt can drop into it.

In being compressed air will be raised in temperature, and will have a greater affinity for water. As it later expands somewhat in the air receiver from time to time, it cools somewhat and condenses. The resulting water runs by gravity to bottom of the air receiver. This must be drained regularly, at least once a day.

While some plants have a centralized air system, with a central compressor or compressors providing air for spray guns and all other plant uses, there are instances where demand for air at different times fluctuates so widely that central compressors may be called on for more than they can supply. If this occurs, painting production is not the only thing that suffers. The quality of sprayed work also lowers with an inadequate air supply. Therefore it is wise to provide an independent source of compressed air for the spray guns. Equipment is readily available to make any spray booth or spraying station completely

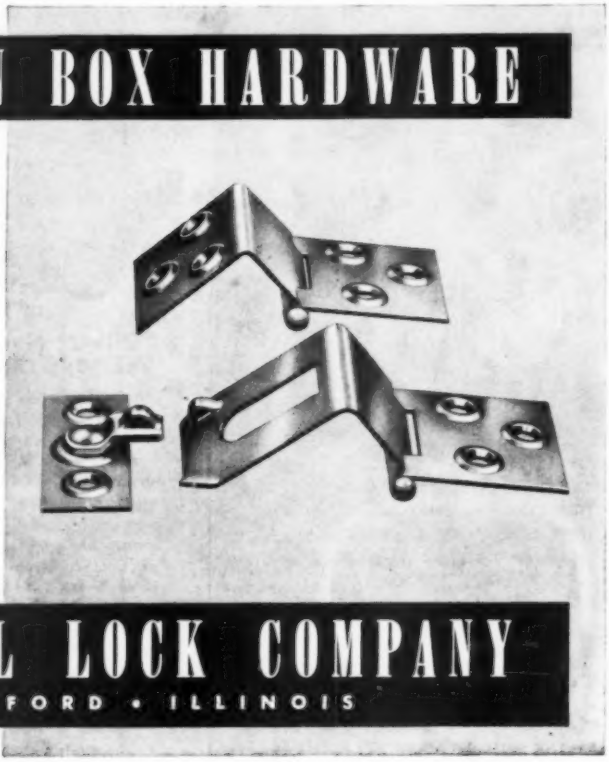
(Continued on page 57)

AMMUNITION BOX HARDWARE

NEW NO. 76-0-46 REV. 5
MARCH 19, 1951

NATIONAL LOCK, a large and dependable World War II supplier, is geared up to serve you on ammunition box hardware (as illustrated), wood screws, as well as many other items that fit into your defense production plans. • Both peace and wartime experience, coupled with NATIONAL LOCK'S extensive plant facilities, places us in a position to be of valuable assistance to you. • Send complete information and prints whenever possible.

ASK ABOUT OUR EXTENSIVE LINE OF HANDLES . . . HINGES . . . HASPS . . . SCREWS . . . BOLTS



NATIONAL LOCK COMPANY
ROCKFORD • ILLINOIS

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WATERPROOF PAPER

3 ways better:

1. Faster Cut
2. Better Finish
3. More "Mileage"

Here are some typical comments from users of "Red-I-Cut" Waterproof Paper at all types of shops:

- *A North Carolina shop foreman says:* "Red-I-Cut is sharper, lasts longer, and is more flexible."
- *From an Indiana plant superintendent:* "Tougher, and cuts better."
- *A southern shop owner:* "Very few wild edges with Red-I-Cut —and we don't have to waste time soaking it before use."
- *A Jamestown, N. Y. finisher:* "Gives a better finish, faster cut and more mileage than any other product we have ever used."
- *A Grand Rapids foreman:* "Best waterproof we ever had."

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Send sample of "Red-I-Cut" Waterproof Paper for comparison with the product we are now using.

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The immediate acceptance of new "Red-I-Cut" Waterproof Paper by CARBORUNDUM is based on the consistently better performance of this new product in the finishing room.

In recent production runs, including the new extra-hard finishes, new "Red-I-Cut" Paper cut faster... produced a better finish... averaged 50% longer life. It increased production, reduced down-time to a minimum, and produced substantial savings in subsequent finishing operations.

Ask for the *RED-BACK* paper by

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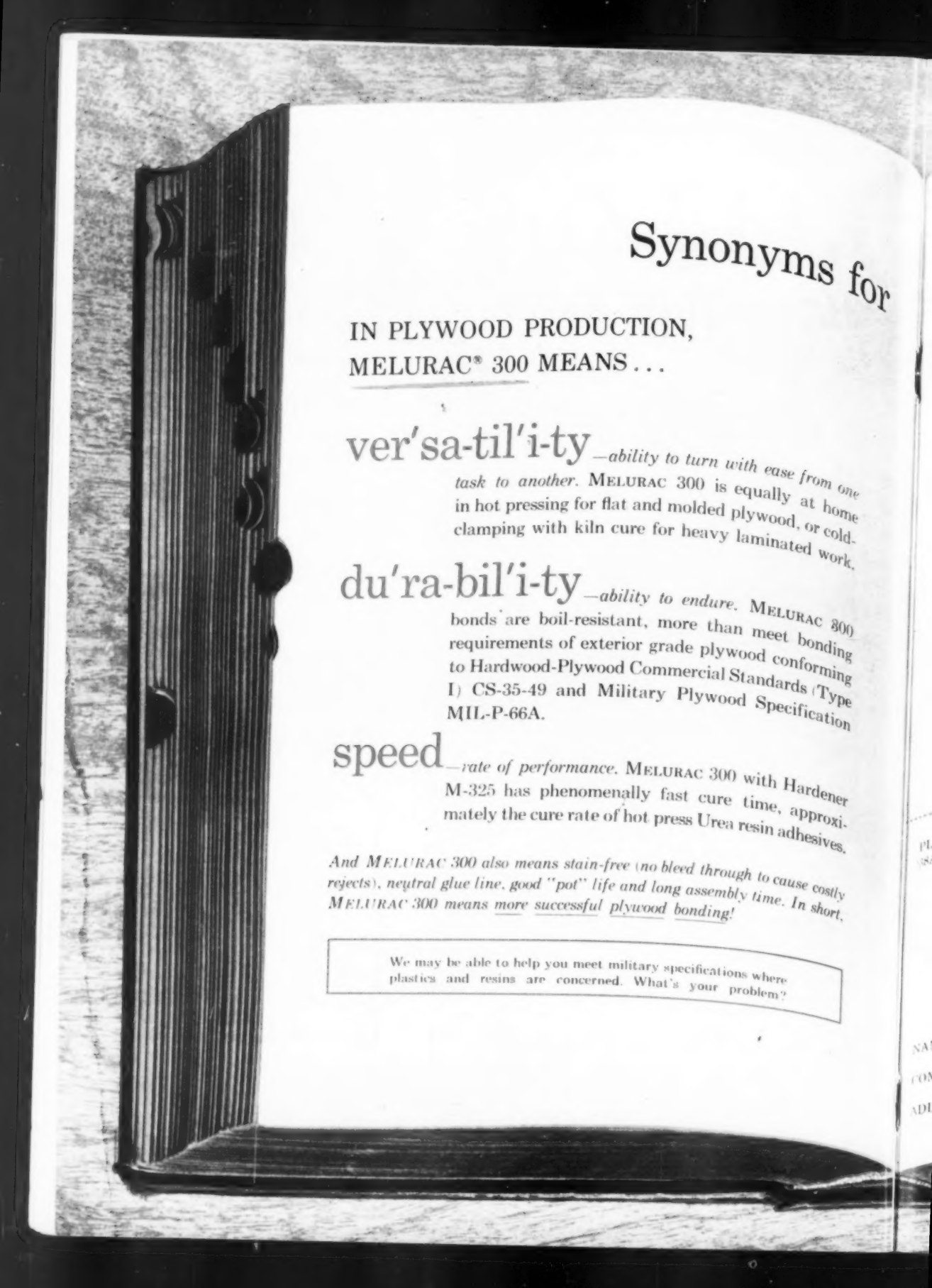

Synonyms for

IN PLYWOOD PRODUCTION, MELURAC® 300 MEANS . . .

ver'sa-til'i-ty—*ability to turn with ease from one task to another.* MELURAC 300 is equally at home in hot pressing for flat and molded plywood, or cold-clamping with kiln cure for heavy laminated work.

du'ra-bil'i-ty—*ability to endure.* MELURAC 300 bonds are boil-resistant, more than meet bonding requirements of exterior grade plywood conforming to Hardwood-Plywood Commercial Standards (Type I) CS-35-49 and Military Plywood Specification MIL-P-66A.

speed—*rate of performance.* MELURAC 300 with Hardener M-325 has phenomenally fast cure time, approximately the cure rate of hot press Urea resin adhesives.

And MELURAC 300 also means stain-free (no bleed through to cause costly rejects), neutral glue line, good "pot" life and long assembly time. In short, MELURAC 300 means more successful plywood bonding!

We may be able to help you meet military specifications where plastics and resins are concerned. What's your problem?

Successful Bonding

IN WOOD WASTE BONDING, MELURAC 301 MEANS . . .

e-con'o-my —*method to keep down expenses.* Costwise MELURAC 301 compares favorably with other thermosetting resins used for wood-waste bonding, and its added efficiency means greater production savings.

sta-bil'i-ty —*ability to last.* MELURAC 301 is water-white with color-fastness. Its lower temperature curing range promotes dimensional stability, and its durability imparts superior weather resistance.

MELURAC 301 also means fast cure time at intermediate temperatures. In short, MELURAC 301 means more successful wood-waste bonding!

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- Cypress
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FOREST PRODUCTS RESEARCH SOCIETY

F.P.R.S. Monthly Bulletin

Research • *Development* • *Production* • *Utilization* • *Distribution*

by FRANK J. ROVSEK, Executive Secretary, P. O. BOX 2010, UNIV. STA., MADISON 5, WISC., AUGUST, 1951

New "Journal of the FPRS" Released this Month

AS ECA-AFA TEAM NO. 4 TOURED FOREST PRODUCTS LAB

Examining Dry Kiln Control Panel during their tour of facilities of U.S. Forest Products Laboratory, Madison, Wis., these European timber executives comprise one of seven teams visiting U.S. Industry. L. to R—Cor Groot, Amsterdam; E. Von Hofsten, Mg. Dir., Swedish Retail Lumber Dealers Assoc.; H. M. Hoogewoud, OEEC Secretary; C. Hemsing, Dir. Hemsing Timber Co., Amsterdam; K. H. V. Swensson, Mgr. Ulvsunda Sawmill, Bromma Sweden; B. Laming, Mgr. Laming's Woodimport Sawmill, IJsselmonde, Netherlands; A. H. Cramer, Mg. Dir. Timberimport, Kampen, Holland; H. A. Back, Section Head, Danish Industrial Associations and Association of Wood Industry; J. C. Killebrew, Information and Education Div., U.S. F.P.L.; Arne Stange, Bus. Mgr. Halvorsrud Sag and Hoveleri, Arnes, Arnes Norway; E. H. Nielsen, Mg. Dir. V. M. Brockhuus, Copenhagen, Not pictured, project manager George M. Hunt.

European Timber Executives Continue U.S. Tour

Under the auspices of the Economic Cooperation Administration and arranged by the American Forestry Association, two groups of European wood industries leaders have been visiting U.S. plants and laboratories, studying our methods and exchanging ideas and experience on wood utilization. The purpose of the tour is to make available to our friendly nations information regarding methods and techniques that have made for our high standards of production. It is hoped that these groups may apply knowledge gained toward greater productivity for timber and allied industries in western Europe.

Participating are eleven Marshall Plan countries—Austria, Belgium, Denmark, France, Germany, Greece, Netherlands, Norway, Sweden and th United Kingdom. Dr. G. A. Garratt, Dean of Yale School of Forestry, and former FPRS President, is Project Director.

FPRS has been fortunate in being permitted, through the courtesy of the American Forestry Association and the U.S. Forest Products Laboratory to tell each of these groups of the work of our organization in furthering wood utilization. The Society has forwarded to each visitor a portfolio of principal papers within his interests.

STILL TIME FOR YOUR IDEAS . . .

on the National Program, June 23-25, 1952, Milwaukee, Wis. What general subjects would you like featured—and why? What research or development do you have that might be presented? Send suggestions to *K. G. Chesley, Crossett Lumber Co., Crossett, Ark.* Non-members as well as members invited to contribute.

In line with its program of increased service to members and the industry, the Forest Products Research Society announces the availability of a new publication, the "Journal of the FPRS", containing some 45 technical and semi-technical papers dealing with research and developments cutting across the forest products industries.

The "Journal of the FPRS", made up primarily of papers presented before 10 FPRS Section meetings across the country, will supplement the *Annual Proceedings* of the Society which contains all of the papers presented before the Annual National Meeting. The new volume of some 200 pages will be the same size and format as the *Annual* but will be paper cover bound. It is hoped to issue the "Journal of the FPRS" on a semi-annual, and eventually quarterly or monthly, basis.

For the first time, this new publication will ensure, complete coverage of worthwhile papers heretofore presented locally, to over 2,000 members. It will also provide a medium for a majority of FPRS Sections who have not had the finances or the personnel to publish their own Proceedings to disseminate the product of their efforts.

As copies come off the press in late August they will be distributed free to FPRS Supporting, Voting and Associate classes of membership and will be made available at reduced rate to student members. A limited number of copies will be made available to the industry at prevailing book rates. Selling price is to be determined.

This first volume contains representative, and in many cases all, papers presented at FPRS Section Meetings since the Fall of 1950. Subject matter ranges from specialized interest papers of regional concern to those having broad significance regardless of location.

Papers are arranged by *Section*, and cross-referenced by *subject mat-*

(Continued on page 48)

(Continued from page 47)

ter. Thus, if you desire to read all of the papers presented in your locale, *and* also wish to review everything on, for example, plywood, the contents are arranged for you to do so.

Tentative Contents

While, at this writing, papers are still coming in, and others are being edited, the *final* contents have not been arranged. Following are papers already included:

Pacific Northwest

Cedar Leaf Oil Extraction, J. Cochrane; Developing Lumber Markets, G.C. Edgett; Control of Moisture Content in the Manufacture of Kitchen Cabinets, Mottet and Ring; Chemicals from Douglas-fir Bark, Kurth; Wood-Gas Turbine Research, Atherton; Compression of Douglas-fir Veneer during Pressing, MacDonald; Integrated Manufacturing, an Aid in Management of Over-Mature Forests, R.P. Conklin; Second-Growth Douglas-fir Lumber, E.E. Matson; Problems and Economics of Timber Production in Second-Growth, Stier; How Simpson Insulating Board Products are Made.

Pacific Southwest

Importance of Moisture in Wood, A. Koehler; Preliminary Report on Wood Waste and Resin Products, H. Miller; Incineration of Wood Waste in the Los Angeles Area, Chass and Feldman.

Inland Empire

Small Sawmill Set Works, J. Ellersick; Effects of Taper Sawing and Log Turning, C. J. Telford; Production of Livestock Feed from Waste Wood, E. E. Harris; Utilization of Cedar Slash, D. S. Olson; New Dry Kiln Practices, A. Hermann; Utilization of Slash by Chipping, E. E. Hubert; Swedish Gang Mills in the Inland Empire, L. O'Neil.

Midwest

Care and Maintenance of Carbide Tools, R. D. Brooks; Proving Ground for Machinery—the Furniture Factory, G. W. Stanley; Conservation of Lumber through Removal of Defects, F. J. Heid; Portable Mechanical Aids for Sanding, Rubbing and Polishing of Wood, R. Nelson.

(Continued on page 50)

IT'S MILWAUKEE, JUNE 23, 24, 25, 1952

Scene of the Sixth Annual FPRS National Meeting will be Milwaukee, "Meeting Place of Great Councils" Wisconsin. Advance planning indicates a two and one-half day technical program plus one-half day for plant tours in this city world-famed for civic beauty and progress, old-world hospitality, heavy manufacturing and brewery industries. In this air view taken over Lake Michigan, note 1) Modern Schroeder hotel, where meetings will be held; 2) Civic center; 3) City hall.

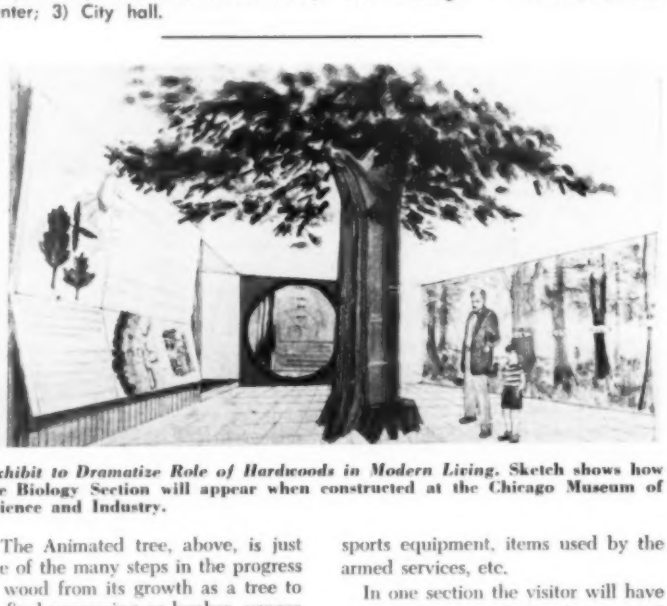

***Exhibit to Dramatize Role of Hardwoods in Modern Living.* Sketch shows how the Biology Section will appear when constructed at the Chicago Museum of Science and Industry.**

The Animated tree, above, is just one of the many steps in the progress of wood from its growth as a tree to its final processing as lumber, veneer and finished products, that are demonstrated. Elsewhere the visitor will see animated scale model plants, color motion pictures and a vast array of end products made from hardwoods, including period and modern furniture, room interiors, cabinets, sports equipment, items used by the armed services, etc.

In one section the visitor will have an opportunity to learn the parts of the world from which various species are obtained. An eight-foot globe with panels of different hardwoods illuminates the different countries. Two million persons annually are expected to visit the exhibit.

Board Materials from Sawdust and Shavings

By J. P. HOHF, Chemist,
U. S. Forest Products Laboratory, Madison, Wis.

NOTE: Since the supply of resins at present is very critical, it is suggested that anyone contemplating developments described here should ascertain the availability of resins before proceeding too far. But as conditions change and resin supplies become more plentiful, it is anticipated that much more sawdust and shaving type of wood waste will be used in the production of the special types of board materials.

Variety of Processes

There is a great deal of interest in the utilization of sawdust and shavings and similar wood waste for the production of board materials by methods other than the wet-forming process, which is practically limited to coarser types of wood waste from which relatively undamaged fibers can be produced.

One of the earliest attempts has been the production of cement-bonded boards for use where structural strength and insulation are important. This process has found limited commercial application because of the inhibiting effect of the hemicelluloses and tannins of the wood on the setting of the concrete and of the tendency for absorbed water to freeze and thereby crack the boards or blocks. Methods of controlling the setting rate of the cement have more recently been developed, but very close control in processing is necessary. One of the most successful wood-cement combinations has been the production of an acoustic tile material by using specially cut excelsior bonded with cement. This product has good fire resistance and, when properly set, good resistance to swelling and decay. However, to produce the best material, only specially cut wood wool or excelsior is usable, so that random sawdust and shavings are eliminated from use.

Successful Applications

Dry-formed or resin-bonded board materials appear to be much more attractive at the present time. There have been a number of successful applications of this process.

Sawdust, shavings, and veneer clippings of relatively wide range of sizes are being used to produce boards of various specific gravities and of a range of properties making them suitable for special uses. One of the early developments uses 10 to 15 percent of urea-formaldehyde resin binder and graded sawdust or shavings to obtain products used as subflooring for linoleum, house sheathing, and core stock for furniture and doors. A somewhat similar process, also using urea-formaldehyde resin binder, has been developed for the utilization of veneer clippings, which have been reduced to a suitable size, for the production of core stock. Two millwork companies are producing phenolic-resin-bonded sawdust boards with 5 to 8 percent of resin, being utilized very satisfactorily in the production of panels for millwork.

15-30 Ton-Per-Day Capacities

Many other investigators are approaching this problem from slightly different angles, including the semi-dry-formed process being developed in the Pacific Northwest. Such utilization of wood waste promises to become of major importance. The dry processes and semidry processes appear to lend themselves to somewhat smaller plant sizes than has been generally considered economical for the more common wet-formed or pulp process. For example, production of 15 to 30 tons per day of dry-form boards appears to be practicable, as compared to the 50- to 100-ton daily capacity considered most practical for the wet-formed process.

Further, it is estimated that the dry-formed plant can be installed for approximately two-thirds the cost of the wet-formed plant, based on the tons-per-day capacity; that is, at present prices, from $15,000 to $20,000 per ton of daily capacity for a dry-formed board plant, and $20,000 to $25,000 per ton of daily capacity for a wet-formed board plant.

It is true, however, that the resin binders required in the dry-formed boards results in a more expensive product than the wet-formed material, but this can be balanced to some extent by the special properties that can be obtained by this method. As a rule, dry-formed boards are superior in hardness and nail- and screw-holding properties, making them particularly attractive for use as core stock.

Equipment Requirements

The equipment required for the production of dry-formed board is relatively simple. If sawdust and shavings resulting from primary lumbering operations are to be used, provision should be made for drying these residues. Conventional inclined drum or belt driers are suitable for the purpose. The sawdust, shavings, or veneer scrap must be sized or graded to prevent too wide a distribution of particle size. This requires a relatively simple hammermill, and screening equipment. For the application of the binder to the wood waste where liquid resins are used, ribbon mixers or concrete mixers have been found suitable.

Where dry resins are used, a slightly more intensive type of mixing is generally employed for incorporating both the powdered resin and small amounts of water. Following the mixing, it is necessary to have an automatic or semiautomatic tray loader that is capable of loading the pans or trays with a uniform weight and thickness of the wood waste-resin mixture. These pans or trays are then transferred through automatic loading devices to multiplaten hot presses, where the board is formed and the resins are set under heat (350° to 450° F.) and pressure (350 to 750 p.s.i.), with the amount of pressure applied determining the specific gravity of the finished product.

New FPRS Staff Member

Arthur L. Heim

The Society has been privileged since May to enjoy the half-time participation and counsel of A. L. Heim who, until his retirement after over 40 years of government service, served as Chief of the Division of Operations and Plant Management, U.S. Forest Products Laboratory. Mr. Heim is helping to fill the vacancy created by Mrs. Robert's leaving, and is doing a splendid job of handling the Society's advertising and publications sales programs. He is also helping to improve the overall efficiency of our diverse staff operations. Formerly Editor of AWPA Proceedings, Mr. Heim will provide much-needed help in our issuance of technical papers.

Research Publications

The following publications are reported as being currently available, without charge, from the U.S. Forest Products Laboratory, Madison 5, Wisconsin.

No. SR19—*Supplementary Information on Brazilian Araucaria* (Parana Pine).

Tech. Note 252—*Chemical Brown Stain in Pine*, its occurance, cause, and control. Rev. April, 1951.

No. R285—*Manufacture of Veneer*. Includes definition and thicknesses, preparation of wood for cutting, rotary cutting, slicing, sawing, drying, waste, and a description of the industry and its products. Rev. May, 1951.

No. R508—*List of Publications Relating to Fungus Defects in Forest Products and to Decay in Trees.*

No. R899—27 *Small Sawmill Improvement*. Instruction on sawing hardwood logs and edging and trimming hardwood lumber for grade and value recovery. Recommendations should lead to improved quality in a majority of such logs sawn, and serve as a start in grounding sawyers on grade-sawing.

No. R1463—*Gasogens*. Gasification of wood or charcoal in generators attached to vehicles for use in place of gasoline. Describes fuels, equipment and principles, operations, comparison of power developed, and results. Rev. March, 1951.

No. 1593—*Acetylated Wood*. New method of treating wood with chemical vapors to improve its dimensional stability when exposed to severe humidity or immersion. Acetylation leaves wood permanently swollen; reduces shrinkage 70%. Permanent. Resistance to decay, shipworms improved. Strength not impaired. Rev. August, 1950.

No. R1657—*Air Drying of Lumber*. Principles of good practice as applied to hand-stacking, and how they are being lived up to in unit-package drying. Covers yard, piling, roofs, coatings, etc.

Report D1766-4—*Veneer Cutting and Drying Properties, Western Larch*. Important tree of inland empire. Boles 140-195 feet high and considerably clear. In density and mechanical properties it resembles Douglas-fir. Report covers selection, handling, preparation, cutting, drying and yields.

No. R1768—*Adhesives for Bonding Wood to Metal*. Woodworking adhesives have not been found too suitable, are not elastic enough to distribute stresses. Vinyl resin, natural and synthetic rubbers have been used in combination with thermosetting resins.

TO BE CONTINUED

"JOURNAL OF THE FPRS"

(Continued from page 48)

Deep South

A Comparison of Treatment of Green Southern Pine Poles with Pentachlorophenol-Petroleum and Coal Tar Creosote Solutions, R. T. Roger and E. A. Behr; Adhesive Bonded Refrigerator Freight Cars, F. H. Snyder and C. Plisky; Research Modernizes Gum Naval Stores Industry, E. L. Patton; Present Status of Training Men for Industry, R. F. West; Quality Control, C. Latimer.

Florida-Georgia-Alabama

Theory and Application of Dielectric Heating, K. W. Eubanks; Better Tools for Gum Production, M. E. Ryberg; Further Experiments on Dimensional Stabilization, Kenega and Sproull.

Virginia-Carolinas

Economies from Use of Improved Cutters in Woodworking Plants, S. S. Sechrist; Cost and Quality Results from Use of High Speed Moulders, Finn; Tolerances and Precision in Machining of Wood, D. M. Rose; Open Season on Saws, Reineke; Cut-Control Saws, Durst.

Northeast

Quality Control in Furniture Manufacturing, P. B. Posser; Advantages of Working to Gauges in Machining Small Parts, Jopson.

Further information regarding the new "Journal of the FPRS" or other publications of the Forest Products Research Society may be had by writing to, Executive Secretary, Box 2010, University Station, Madison 5, Wisconsin.

FPRS Lady of the Month

. . . Mrs. Marie Roberts

former Assistant Secretary of FPRS who, after having been associated in unofficial capacity with the Society since its inception in 1947, has found it necessary to relinquish her part-time duties in order to render undivided service as secretary to Dr. J. Alfred Hall, Director of the U.S. Forest Products Laboratory.

Mrs. Roberts has the distinction, and vast knowledge that accompanies it, of having worked with every FPRS secretary to date.

The national office staff joins Mrs. Roberts' many friends in the Society in adding their sincere thanks for her efforts.

It is apropos to mention two other young ladies who are associated with the Society—Mrs. M. J. Lingle, Records, filing and secretarial, and Miss B. John, Bookkeeping and secretarial.

Important Dates Coming Up

Sept. 19, 20, 21—Midwest Section to meet at Oshkosh, Wisconsin, discussing developments, equipment and techniques in plywood and veneer, millwork and furniture production. (Note: Executive Board of the Society will convene in Milwaukee, Sept. 17 and 18, and a number of members plan to continue on to Oshkosh).

Sept. 27 and 28—Inland Empire will hold its Annual Demonstration Meeting at Sandpoint, Idaho.

Oct. 5 and 6—Florida-Georgia-Alabama section meets at the Daniel Ashley Hotel Valdosta, Ga. Theme—Wood Mobilization. Principal speaker, Admiral Joseph F. Jelley, C.E.C., U.S.N. Chief of Bureau of Yards and Docks.

October, Deep South Section to hold its Annual Meeting at Shreveport, Louisiana. Host will be the A. J. Hodges Industries, and tours through its expansive operations are planned.

Nov. 1 and 2—Northeast Section to meet at the Massachusetts Institute of Technology, Boston, Mass.

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TIMBER TOX

that spell

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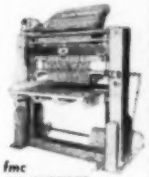
drives up to four screws simultaneously into wooden boxes and other assemblies. Ideal for screwing hinges, swivels and hasps on small ammunition or similar type boxes.



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24-nail drive head; 87 strokes per min.; all type nails, 3d to 10d. Open back; 48", 66", 80" standard widths; others available. Designed for large scale industrial nailing.

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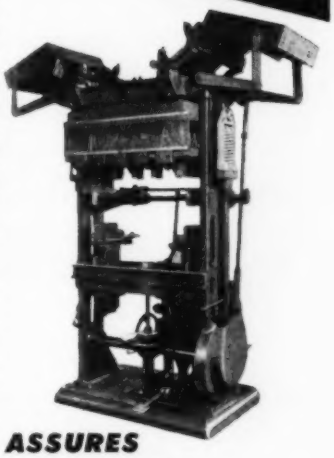

ASSURES INCREASED PRODUCTION!

fmc model Ac-5A nailing machine nails sides and bottoms to ends of various types of ammunition and industrial boxes. Handles boxes up to 16"x16"x26" wide. Completes 125 to 150 boxes an hour, depending on type of box. Drives 6d to 8d nails. Geared to operate at 53 strokes a minute. Basic machine drives up to 24 nails per stroke. Can be equipped to drive 32 nails per stroke.

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☐ *(AC-5A) Nailer*

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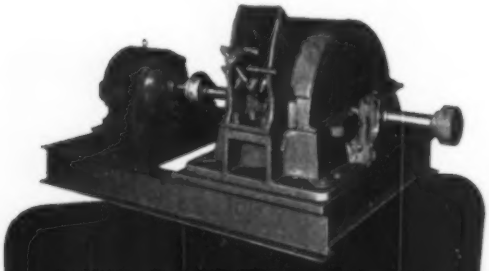
M & M utilization equipment

FOR SOIL CONDITIONING



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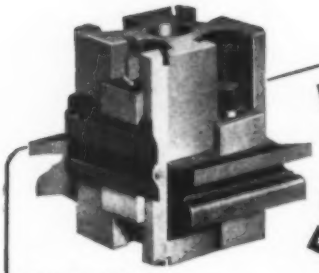

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. . . a master tool for master craftsmen—for a wide range of woodworking jobs!

You'll cut costly set-up time and boost production with Shimer Combination Heads! They're available with milled-to-pattern bits that hold their pattern permanently for door and sash (either standard or special), as well as for matching, shiplap and mouldings of most any shape! Bits may be quickly and correctly set-up with convenient gauge furnished. Put the Shimer Combination Head to any test—it will quickly prove its value in your shop!

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Grading Quiz

(Continued from page 31)

best hardwood flooring,* B and Better grades for the best softwoods and various other grades depending upon wishes of owner. For the cheapest construction, lower grades may be used, especially when floor coverings are used. For interior and exterior trim, the better grades of hardwood and softwood are generally used. For studs, No. 2 is generally used.

11. *Question. Are there wide differences in value of different grades?*

Answer. Yes. Defects are more numerous toward the center of logs, therefore a considerable percentage of lumber produced is No. 2 and No. 3, very much lower in value than the better grades. It must be remembered, however, that for most purposes it is not necessary that lumber be entirely free of defects and so the most economical and useful grades are those that comprise the greatest pro-

*Hardwood flooring is made by cutting out the defects found in No. 1 and No. 2 Common and No. 3A Common so as to produce as much clear flooring as possible.

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portion of the indusry's production.

12. *Question. What are the principal defects which determine yard grades?*

Answer. Knots are the principal defects which determine yard grades. There are many different kinds of knots as to size and condition. Other defects are wane, pitch streaks, pitch pockets, checks, shake, rot or decay, imperfect manufacture, and several others.

13. *Question. What is the grade outturn of some species?*

Answer. In Douglas fir, Select grades 16%; shop or factory grades 5%; select and structural dimension timbers 20%; No.1 boards, dimension and timbers 32%; No. 2 boards, dimensions and timbers 17%; No. 3 boards, dimension and timbers 10%; total 100%.

In southern pine, latest survey by Southern Pine Association covering three-quarter billion feet shipped by seventy-eight mills showed 8.2% B and better, 6.5% C, 5.3% D, a total of 20% select grades; 4.9% Timbers, 10.7% No. 1, 48.7% No. 2, 14.7% No. 3 and 1% No. 4.

To Be Continued

for Wood Preservation

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The Original WATER REPELLENT PRESERVATIVE
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WOODLIFE *Protects* WOOD *Against:*

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The Tell City Furniture Company has learned from profitable past experience with Standard Dry Kilns that exact conditions throughout every kiln load pays off in lower drying cost.

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Out in the Shop

Here is a department that has for many years been a favorite with Wood Products readers. We continue this valuable section to wood plant operators with the subject of Jointer Job Hints.

SNIPPED ENDS ON JOINTED WORK INDICATE THE OUTFEED BED OF THE JOINTER IS TOO LOW and hollow jointing indicates it is too high. Proper adjustment of the outfeed, or rear bed, is made by first lowering it to a point somewhat below the level of the cutting circle, and then passing a piece of fairly thick stock slowly across the cutterhead until it extends about 3 inches beyond the jointer throat and above the rear bed. The partially jointed piece of stock should be clamped in this position and the rear bed elevated until it makes slight contact with the jointed surface of the under edge. This must be just a slight contact or the bed will be adjusted too high and the stock will crowd up on it and leave the knives.

* * *

THE LIP OF THE INFEED TABLE OF THE JOINTER SHOULD ALWAYS BE REGARDED AS A CHIPBREAKER. Like the conventional chipbreaker, the infeed table should be set so the lip is as close to the cutting circle as possible. This consideration prevents the use of heavy cuts because the table must be lowered in proportion to the depth of the cut taken and, since the inclines operate on a straight and oblique line, the heavier the cut, the lower the position of the infeed table, and carrying this still farther, the lower the table, the farther away from the cutting circle will be the lip, or chipbreaker.

* * *

WHERE STOCK IS STRONGLY BOWED WIDTHWISE, it is best to straighten the crowned edge because this edge can be straightened more easily, more accurately, and with less loss of stock.

A QUICK KNIFE-SETTING ATTACHMENT FOR THE JOINTER is a roller-type knife set, which mounts a roller that can be independently adjusted for height and can also be traversed the full length of the individual knife. In operation the roller is usually set to provide the desired knife projection and, with the knife slipped into the head slots and tightened lightly to keep them from slipping, the roller is brought in contact with the knife edge to push it back to the pre-set amount of projection. Each knife is set to the roller as the cutterhead is turned slowly over backward. This setting is usually made over quarter sections of the knife, although the traversing capacity of the roller permits contact with every inch of the knife edge if one desires to be that meticulous.

* * *

WHERE BOTH A SIDE AND EDGE ARE TO BE FACED SQUARE AT THE JOINTER from distorted stock, it is well to face the side first to insure a square edge when the edge is faced. The operator should face the side perfectly flat and true, removing the smallest amount of stock possible, and then turn the flat side to the jointer fence, set absolutely square, and face off the adjacent side until it is absolutely square.

* * *

VERY SHORT STOCK SHOULD NOT BE FACED AT THE JOINTER because it always has a tendency to tip into the jointer throat, kick back, or both. It is even extremely dangerous to work short stock with a push block.

* * *

IF ONLY A SMALL AMOUNT OF WOOD NEEDS TO BE REMOVED FROM A PIECE to match stock already jointed, the set-up can be made quickly and easily by setting the infeed table to a depth which roughly approximates the cut required. Then run the piece across the cutters just far enough to get a sizing trial cut. Place the stock to be matched alongside this portion on the outfeed table and, by rubbing the thumb, or forefinger, across the two edges, the accuracy of the cut can be easily determined and the infeed table lowered or raised to compensate for any discernible difference.

* * *

WHEN RABBETS ARE CUT AT THE HAND-FEED JOINTER, the cut is always made with the end of the cutterhead nearest the operator. The depth of the rabbet is determined by the distance at which the infeed table is set below the outfeed table and its width is controlled by the setting of the jointer fence. Spurs, attached to the cutterhead at the rabbeting ends, serve to minimize tearing out of the rabbet corners.

* * *

TO JOINT A PIECE OF STOCK, WHICH USUALLY CONSISTS OF STRAIGHTENING AND SQUARING one edge of it, the jointer infeed bed is set for a cut of from 1/16 in. to 1/8 in., with the fence set square, or at 90-degs. It is safe to bear down on the stock directly above the cutterhead, but where preferred, the operator can advance the work to the cutters, placing the left hand over the outfeed or rear table when a sufficient length of the piece rests upon it. No stock, which is shorter than 10 in. or extremely thin, should be jointed without special holding devices.

IDEAS WANTED

The National Safety Council's National Safety Congress is coming up October 8-12. In the Wood Products Section program of this meeting, a time has been set aside for the discussion of:

"IDEAS THAT WORK IN WOODWORKING SAFETY"

If any readers have good suggestions along with diagrams and illustrations to make this another standout session just send them along to us, Wood & Wood Products, 139 N. Clark. We'll see that they are included on the program.

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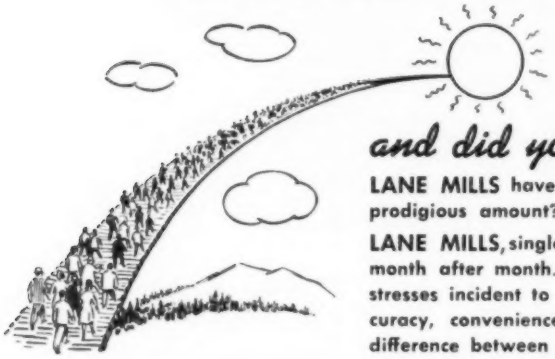
SAW MAKERS FOR OVER 65 YEARS

DID YOU KNOW

YOU COULD WALK TO THE SUN?



IF . . . all the lumber we have produced since 1776 could be put together it would form a four foot boardwalk to the sun, or make a stack of lumber *400 miles* high!

and did you know.....

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LANE MILLS, single or double will run efficiently and dependably month after month. They are built to withstand the strains and stresses incident to converting logs into the finished product. Accuracy, convenience of operation, fast feeds — all spell the difference between profit and loss. If speed and economy is your objective, investigate **LANE MILLS** today!

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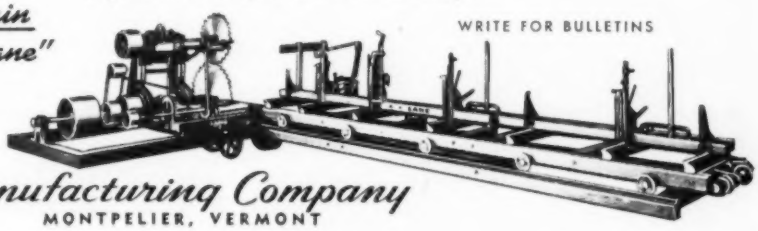


Manufacturing Company
MONTPELIER, VERMONT

TVA STUDY

(Continued from page 32)

predict the value of the lumber it contains.

The U. S. Forest Service has developed a set of hardwood log grades that eliminates a lot of the guesswork. It enables timber buyers and sellers to judge logs by their surface defects and to predict the grades of lumber they will yield. A fair sales price can then be worked out. Log grades provide a standard yardstick of values. They put both the grower and user of logs in a better position to make a fair profit.

Here's how log grades help predict lumber values. Using 6 grades the authors classified 2,830 red oak logs at the study mills. Grades 1, 2, and 3 are standard lumber, or factory grades. Grade 4 (local use) is for those logs that are too defective for grade 3 but are still not cull; they produce low-grade material suitable for rough construction and farm needs. Grade 5 logs are culls; they contain less than 50 percent sound wood. Grade 6 logs are sound but are too small for factory grades (less than 8 inches in diameter or 8 feet in length). Above are the amounts and average values of lumber sawed from logs in each grade.

Lumber Volumes and Values by Log Grades (Red Oak)

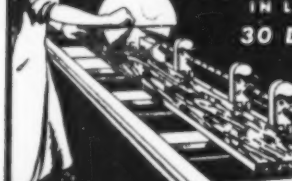
Log Grade	Logs (Number)	Volume (Bd. Ft.)	Average Diameter (Inches)	Lumber Value (Per Mbf.)*
1	237	47,157	19	$79
2	510	46,877	14	60
3	1,215	65,226	11	50
4	592	23,740	10	41
5	54	2,337	12	40
6	222	4,862	8	47

* Based on $110 for FAS rough green 4/4 boards.

The average log fell between grades 2 and 3. It was 12 inches in diameter and produced lumber worth $59 a thousand; about a fourth was No. 1 Common and Better. Since it costs the average millman $54 ($30 for logs and $24 milling costs) to make this lumber, his profit is only $5 a thousand.

Now let's see what his profit would be if he saws only those logs that pay their way—those that produce lumber worth more than $54 a thousand. The table shows us that some grade 3 logs and all logs in grades 4, 5, and 6 are sawed at a loss. So he rejects all grade 3 logs below 10 inches in diameter and all others that fall in the local use, cull, and below-size grades. His average log diameter jumps to 14 inches, his lumber values go up to $62, production costs drop to $52, and he makes a profit of $10 a thousand (see illustration). He produces only 20 percent less lumber but makes $5 more a thousand by not sawing unprofitable logs.

Such a practice would also benefit the timberland owner because most below-size logs come from small, immature trees and not from top logs in large trees. His small, fast-growing trees would be left in the woods to increase in volume and value. If left for a second cut they would yield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HIGH SPEED
BAND SAWS
Saws faster, smoother and easier than conventional band saws. Regularly increase production from 50% to 100% with consequent reduction of costs. Built by sawing machinery specialists. Write for circular.
THE TANNEWITZ WORKS
GRAND RAPIDS 4, MICHIGAN

the highest return to the landowner and the greatest profit to the sawmill operator. Of course if the millman buys nothing but lumber grade logs, the landowner will be stuck with his defective, low-quality trees. But these trees have uses other than for commercial lumber—crossties, acid-wood, local use lumber, and fuel-wood.

Saw Quality Lumber

When one pays a premium price for high-grade logs he certainly wants to get out of them all the high-value lumber he can. This means that the mill must saw accurate lumber and the sawyer, edgerman, and cut-off man must understand lumber grades. Of the half million board feet graded during the study it was found that less than 2 percent failed to meet NHLA and SPIB standards for thickness and width. But too many mills did not get the maximum yield of quality boards.

L. C. Nicely, assistant chief inspector for NHLA, had this to say after helping with the study: "It makes you just a little sick to watch an edgerman leave an inch of clear wood in a strip and a half inch of bark on a board, thereby making a No. 1 Common when he could have had an FAS. Many sawyers do not know lumber grades. They get mostly No. 2 Common when they could get a fair amount of No. 1 Common and Better by proper turning and sawing." The study shows that many circular mills can do just as good a job of sawing as band mills. Yet it is an industry practice to price circular mill lumber 5 percent under band mill lumber. If by careful sawing one establishes a reputation for accurate lumber there is no reason why the product should not bring top prices.

Proof Talks

Using red oak as an example, the authors have seen how the average millman can raise his lumber values $3 a thousand (from $59 to $62) and reduce his production costs $2 (from $54 to $52) by sawing larger and better logs. By stepping up mill efficiency he can cut his costs another $3.50, or down to $48.50. If he saws accurate lumber he can boost his green lumber values another 5 percent, or to $65 a thousand. This gives him a possible profit of $16.50, instead of $5, or a gain of $11.50 per thousand. He can now afford to pay about $40 for grade 1, $35 for grade 2, and $30 for grade 3 logs and still earn a 20 percent profit.

COMPRESSOR CARE

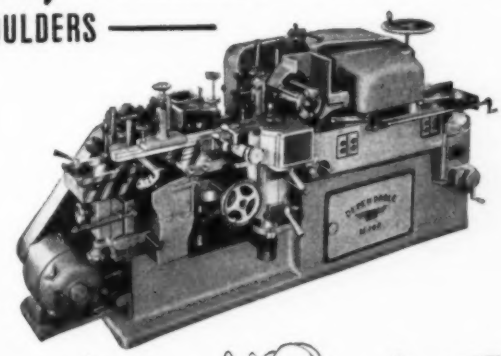
(Continued from page 42)

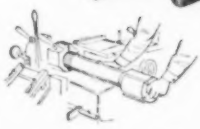
self-contained.

Pipe used for air lines must be large enough diameter to provide free flow of air to spray guns. Adequate supply of air at sufficient pressure means little if air line is restricted. Moisture will collect in air lines, too. Air lines should be coupled to run as directly from receiver to points of use as possible. A low point should be planned in the air line, at which point a drain leg and drain should be provided. Thus water condensing in line will drain to low point and into drain leg. If there is no automatic draining the air receiver should also drain, the same man responsible for draining the air receiver should also drain air lines. Proper separators used in any line as need may appear will remove dirt and moisture from entrained air in cases where ordinary draining is not sufficient.

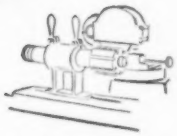
Generally, air compressors and allied equipment provided by spray gun manufacturers operate to better advantage with regard to spray painting than many other machines. Often they will deliver more compressed air for given amount of electricity consumed than others.

NEW! DEPENDABLE'S ELECTRO-UNIT DRIVE MOULDERS





Quick, easy removal of Cartridge Spindle Unit



Head being ground on Cartridge Spindle Unit

Head being jointed on Cartridge Spindle Unit

QUICK SET-UPS, HIGH SPEED, LOW COST
FEATURES OF MOULDERS COSTING UP TO 3 TIMES MORE

New cartridge spindle units make it possible to set-up, grind, joint and pre-test all patterns in grinding room. Change in pattern made in one minute. **A moulder man's moulder,** in 4, 6 and 8 inch capacities . . . High speed production; heavy cast-iron construction; variable feed; standard high speed spindles without frequency changer; convenient, quick-acting controls; plenty of horsepower through standard motors; 100% ball and roller bearings, pre-lubricated. Less maintenance. Jointer furnished on machine. Designed for top performance in large, medium and small mill operation, multiple and single knife work. Priced so that the smallest shop can afford one.

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MOULDERS • KNIFE GRINDERS • HEAD GRINDERS • KNIFE JOINTERS • KNIFE BALANCERS • RIP SAWS

REDWOOD CORES

(Continued from page 38)

piece of furniture rejected or returned because of complaint due to the performance of the redwood core. Needless to say, this pioneer in the utilization of redwood for this purpose is still a steady user.

Future Utilization

The Scotia firm plans to brand carefully manufactured cores of selected vertical grain, straight grain redwood, fabricated expressly for top grade furniture. This will enable core purchasers to be certain that they are getting the redwood best suited for core use.

The lumber of which the cores will be made will be kiln-dried before edge gluing. However, it is realized that moisture will be picked up during fabrication and shipment. Accordingly, it is the company's intention to recommend that the cores be redried to about six percent M/C, just prior to assembling them into panels. Moisture contents below six percent are neither recommended nor needed.

Another strong recommendation is that the core be surfaced within 24, or at most 48, hours before applying the crossbands.

For those furniture manufacturers who have their own core cut-up departments and edge gluers, The Pacific Lumber Company intends to make available, within the limits of their production capacity, kiln-dried, vertical grain, straight grain redwood lumber, specially selected for texture for core purposes and shipped rough, with redrying and surfacing to be done by the customer. This stock will be stamped "Palco Furniture Core Stock" to distinguish it from redwood selected for other purposes and to insure the customer against using redwood unsuitable for cores.

The quantity of lumber of the exacting quality required for cores and core stock is limited and every effort will be put forth to make it available to furniture manufacturers needing particularly stable and smooth cores.

Similarly selected flat grain, straight grain redwood cores and lumber will be produced for laminating into blocks for band sawing into serpentine drawer fronts and similar units.

H.F. for Cores

Assembled cores are edge glued under electronic high-frequency heat with a highly water-resistant urea formaldehyde synthetic resin glue.

Strips and boards in each core are full length of the core, although The Pacific Lumber Company is installing equipment to join lumber endwise—make long ones out of short ones—with finger joints with urea resin glue set electronically. Some of this stock will be glued edgewise to core sizes and tests will be made to determine the suitability for use in furniture panels of a core so constructed.

Presently, core thickness is restricted to 1" stock, although provisions to enable the manufacture of 1¼" thickness for cores for desk tops are under consideration.

At the moment the maximum sizes that can be produced are 48 in. by 96 in. when S1S 7/8 in. hit or miss, 35-1/8 in. by 96 in. when S2S, and 34 in. x 96 in. when S4S.

The lumber to be utilized for cores and core stock will be wedged on the head rig to be sawn parallel to bark, rather than to the pith, to produce straight grain lumber lengthwise.

It will be interesting to watch the utilization of this age-old material now being specially manufactured for an entirely new application.

a UNION machine . . .
TO MEET ANY WOOD GLUING NEED

UNION SERVES OVER 1,600 SATISFIED CUSTOMERS

UNION MODEL 10 TABLE-TYPE EDGE GLUE SPREADER

Single roll, all-purpose, for gluing edge or small surface. Roll lengths, 12", 18" or 24". Diameter 8¾". Doctor roll is adjustable. Rolls are easily removed for cleaning. Jacketed copper glue tank for either steam or electric heat.

UNION MODEL 60 BENCH-TYPE EDGE GLUE SPREADER

Spirally corrugated, chrome-plated roll; 8" or 10" long by 6½" diameter. Longitudinal corrugated or rubber-covered coating roll also available.

UNION MODEL 13 BENCH-TYPE EDGE GLUE SPREADER

For either edge or flat surface gluing. Manually operated. Furnished with steel roll longitudinally corrugated for hot glue, or with neoprene-covered roll with spiral corrugations for resin or cold glues. Lengths—12", 18", 24".

• • • •

NOTE: Any Union spreader available equipped with rubber-covered doctor roll, if desired, at no additional cost.

• • • •

Write for data on the complete Union line. Name of Union agent in your territory will be supplied on request.

Union makes equipment for every standard production job in wood gluing. Also designs and makes machines for special applications—including machines for electronic gluing.

Write for your free copy, "The How's and Why's of Wood Gluing," by Thomas D. Perry.

UNION TOOL CORP.
312 EAST MARKET STREET
WARSAW, INDIANA, U. S. A.

USERS SAY UNION CUTS COSTS — SPEEDS PRODUCTION

SEASONING EXPERTS

(Continued from page 28)

ent dry kiln operation was a full time job.

Considerable trouble is often encountered when kiln operators of the old school are given modern dry kilns to operate. Most of these men know all there is to be known about kiln drying, regardless of how crude or superficial their ideas may be, and they can't be told. They are prone to judge moisture content of wood by tasting it, moisture in the air inside the kiln by smell, and the proper amount for vent openings by notched sticks. They even attempt to regulate humidity by the sound of steam flowing through the spray valves or by marks on the spray valve handle. They are not only contented with their knowledge to a point where they will not listen to any suggestions, but are inclined to boast of what little they really do know—or think they know.

Better Operators Pay

This is not meant to detract from the accomplishments of the real skilled operators of the old school who are getting surprisingly good results in the operation of old-type dry kilns, but rather to suggest that much better results would accrue from the use of more modern kilns operated by systematic, scientific planning backed up by a thorough knowledge of kiln drying equipment operation. It may be that the apparent simplicity of the process of kiln drying is responsible for the general loose and care-free methods used in many woodworking plants.

Kiln drying is, and should be, respected as an exact profession. It is not enough that a kiln operator sets an automatic control, changes the setting at prescribed periods, and waits a predetermined length of time for the lumber in the kiln to get dry. For efficient kiln operation the operator should have a thorough understanding of the basic fundamentals of the kiln drying of wood, the mechanical operation of kiln equipment and controls, how various species of lumber react, the effect of heat, humidity and circulation, and how to maintain and control conditions required to dry lumber to the desired moisture content with the least possible amount of degrade and deliver it to the plant for manufacturing in the best usable condition.

The common term "kiln operator" is definitely a misnomer for the man who can successfully develop an efficient system of dry kiln operation and dry lumber consistently without seasoning degrade is a "seasoning specialist". He rates a specialist's pay and is entitled to be treated with proper respect and confidence. Such a man should be classified with supervisory personnel on a par with the foremen. The qualified seasoning specialist will have a good technical background and engineering skill. If he has acquired professional dignity, the seasoning specialist will have an analytical mind, good judgement and will be level-headed. Intelligent dry kiln operation requires a sound practical as well as technical approach.

Where are these seasoning specialists to be obtained? Many plants make it a practice to select some promising young man from within their own organization who seems to be reliable and ambitious and has some knowledge of lumber. If he is fortunate enough to be selected at the time of the dry kiln installation, he is given a quick briefing from the engineer who is installing the kiln. If not, he is

(Continued on page 60

Newest Methods make

Permawood
HARDWOOD PLYWOOD

The combination of latest machinery, skilled workmen, and our own streamlined methods enable us to produce a better product for your purpose. It has met the test for thirty-two years, and we're proud to offer it as PERMAWOOD Hardwood Plywood.

This modern, high-speed lathe cuts veneer up to 100-inches long; has a capacity of 12,000 feet of timber in eight hours.

We make PERMAWOOD panels in standard sizes, in all veneer construction from 3/20" to 1-1/16" thick, and in lumber core construction in 3/4" and 13/16" thickness. Widths manufactured are from 30" to 48"; and lengths from 36" to 96".

Write for latest stock lists and prices.

DARLINGTON VENEER CO., INC.

Established and in continuous operation since 1918

Darlington, South Carolina

(Continued from page 59)

provided with whatever organized data on kiln drying is available, the dry kiln instruction booklet and catalog, and is then supposed to go ahead on his own—without further difficulty.

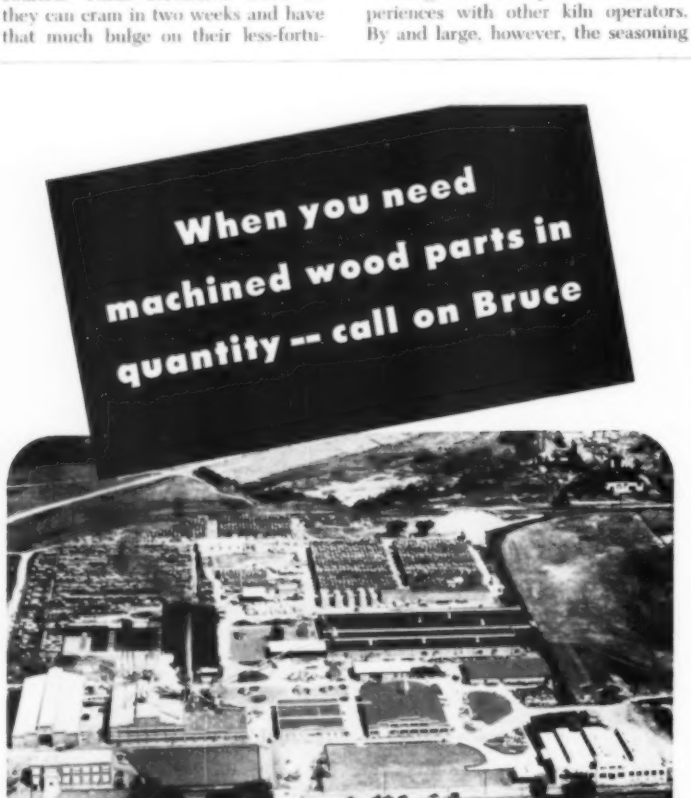
Some of the more fortunate ones are given an opportunity to attend one or more of the short kiln drying courses sponsored by the U. S. Forest Service or one of the forestry or wood technology schools which sponsor such courses. These fortunates learn all they can cram in two weeks and have that much bulge on their less-fortunate brethren. A few of the more select group, usually related to top management, enjoy the advantage of individual instruction from a qualified kiln drying engineer for a period of time, but the expense involved usually cuts this short. Those who are really interested in their job soon learn that attendance to dry kiln club and association meetings affords them an opportunity to keep up with modern developments and to benefit by an exchange of ideas, problems and experiences with other kiln operators. By and large, however, the seasoning specialist trainee has to learn from his own experience.

While there is no organized source of trained seasoning specialists from which the wood industries can draw, there is a source of potential seasoning specialists that is too often overlooked. Graduates of qualified forestry and wood technology schools have the capacity for development into first class seasoning specialists in the shortest period of time, have the educational background on which to build, and can be obtained for the price of the ordinary skilled mechanic at present day prices.

There may be a number of wood technology graduates who will never develop into good seasoning specialists but good seasoning specialists must base their skill on the basic fundamentals of wood technology. They have the added advantage of knowing what goes on inside the wood during drying and usually have the proper engineering approach. It is granted that the graduate fresh from college may have much to unlearn but practical experience application will serve to temper abstract theory quickly and efficiently.

TO BE CONTINUED

When you need machined wood parts in quantity -- call on Bruce



ALL TYPES OF WOODWORKING MACHINERY • 25 YEARS' EXPERIENCE

5 LARGE SAWMILLS • STRATEGIC LOCATION FOR TIMBER

Send your inquiries to

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BRUCE

Wood Parts

FURNITURE DIMENSION

Southern Hardwoods — Solid or Glued-Up — Completely or Partly Machined

WOMEN

(Continued from page 33)

ing, sanding and helpers. Even the packing conveyor carried its compliment of women.

In comparing this firm with other furniture manufacturers in the field we found them in similar circumstances with varying results. Most firms bore a traditional dislike for women in the factory but were compelled to give in to the times.

As time went by and the plant was never able to fill all the jobs with competent men it stuck to female help and has had them on the lighter work in the finishing, and assembly jobs.

Plans are being made once more to place them on the more vital tasks. Slowly men are being drafted and leaving for the more essential industries. Today, the plant is hiring as many women as men.

As a help in maintaining production piece work was found to be of great help. When an incentive is added production rises. Also the increased take home pay means less absenteeism.

All in all this firm has become accustomed to women employees and the supervisors by putting forward an extra effort have made it pay off in satisfied production, employees, and management.

(Continued from page 27)

method of construction eliminates some of the corrosion and maintenance troubles usually encountered.

An operator's building, which contains all drives and controls and overlooks both the kiln roofs and the green storage tracks, runs along the width of the installation. Each kiln is of the reversible, cross-circulation, overhead fan type, and Moore equipment and recording controls were used.

The Green Storage tracks ahead of the kilns are supported by concrete paving, and tracks are long enough to allow either the charge system or the continuous method of loading kilns. On the discharge side of the kilns there is a steel constructed cooling shed with more than 18,000 square feet of storage space. The roof of this building contains gravity-type ventilators which allow the proper circulation of air and cooling of lumber. The track foundations on both the green and dry sides are reinforced concrete supporting slabs with ⅝-in. diameter hooked anchor bolts on 4 ft. centers to secure the tracks. 35 pound per yard A.S.C.E. rail was used throughout, and 4-in. paving slabs poured between all track support slabs.

Automatic Unstacking

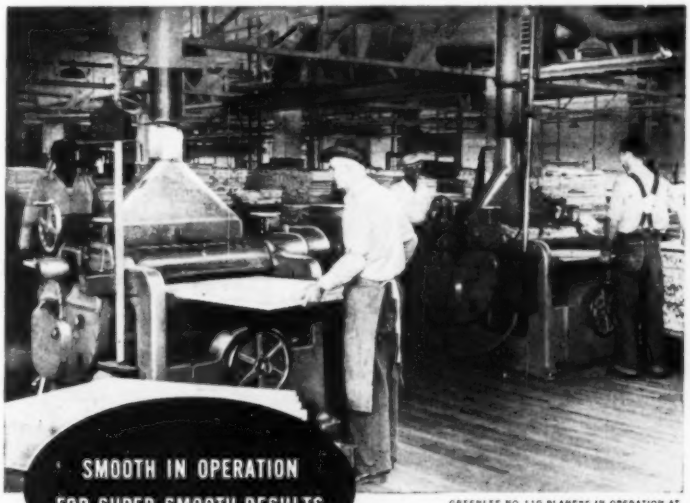
From the cooling area, lumber is transferred via the Dry Transfer to a Moore automatic Unstacker. The latter is housed in a separate steel building and was placed in line with the Stacker to facilitate stick and kiln car returns. The kiln cars are returned entirely by gravity for a distance of some 150 feet. The sticks, which are automatically separated as each course of lumber is pushed off to the Dry Sorter chain, are returned to the Stacker building by a motorized conveyor which is under the control of the Unstackerman.

Lumber from the Unstacker flows out onto the Dry Sorter Conveyor which is made in two sections. One section has 4 strands of ¾" diameter wire rope cable running for 175' over 38" diameter sheaves. The second section is similar except that it has only 3 cables, and each section is driven by a 20 RPM 15 HP gearmotor. The Dry Sorting Conveyor is housed in a steel frame building with corrugated iron roof which measures 40' x 372' and includes a dry pipe sprinkler system. The Pullers' platform is located at the proper working height with lumber being pulled off to packages for handling to existing rough storage building. A 40-ft. wide concrete slab runs the length of the building on the pull off side to facilitate the handling of packages by trucks and carriers and will eventually be part of the floor of a future Rough Storage Building. When the new Rough Storage Building construction is complete, lumber will be pulled off directly to packages for handling to storage by overhead crane with lumber package grapple.

At the feed end of the Dry Sorter Building just after the grading station, boards to be reworked are pulled off the sorting conveyor by an automatic electric swede and passed by a belt conveyor to an adjacent Remanufacturing Building. This Remanufacturing Plant as used at Diboll is rather a new idea. By the reworking of boards there is a distinct value to be gained in the upgrading of lumber. The grader at the Dry Sorter merely pulls out the board for automatic transport to ripping and trimming operations and the products are reintroduced to the sorting conveyor ahead of the grader for re-inspection.

The entire construction project was

(Continued on page 62)



GREENLEE NO. 110 PLANERS IN OPERATION AT WHITE FURNITURE COMPANY, MEBANE, N. C.

. . . Greenlee No. 110 Six-Roll Single Planer

The minute you run a piece of stock through a GREENLEE No. 110, you'll see what we mean when we talk about "smoothness". Finely finished panels can be planed so smoothly that they require little or no sanding.

Yet the No. 110 is a production machine for all types of planing. Feed speeds for rough cuts as well as for finely finished work are available. The entire operation is performed with such ease and speed . . . the finished work comes out with such fine finish and accuracy . . . you'll be able to picture immediately the extra production this GREENLEE equipment can bring to your plant.

Friction, wear, and power consumption are reduced to an absolute minimum by means of ball and roller bearings, and oil-tight housings for the gears, which keep out dust and dirt. Bearings are lubricated by high-pressure grease gun, and the enclosed gears run in oil and lubricate themselves.

In all, the GREENLEE No. 110 Planer brings to all kinds of work . . . whether box boards or finely finished panels . . . unusual production speed, ease of operation, and accurate, smooth results. Write today for details. Greenlee Bros. & Co., 2158 Twentieth Ave., Rockford, Illinois.

MACHINERY & TOOLS
GREENLEE

GREENLEE WOODWORKING MACHINERY: MORTISERS • BORERS • SAWS • TENONERS • PLANERS • SHAPERS • MORTISING and BORING TOOLS

(Continued from page 61)

accomplished while lumber production through existing facilities was continued. Southern Pine is now producing 2,500,000 ft. of pine and 1,000,000 ft. of hardwood each month, with a saving in manpower of 30 men compared to operations prior to this step in its modernization program. Their maximum future cut of pine will be in the neighborhood of 3,000,000 ft. per month, plus one to two million purchased rough green. They expect to be able to handle the future cut through the new edge sorter and dry kiln facilities without difficulty.

FIRE

(Continued from page 25)

containers. Trash accumulations should be removed regularly. Allow ample uncongested aisle space throughout your basement or storage room for easy access to fire doors, fire extinguishers and other fire-fighting equipment.

More and more woodworking plants have organized fire brigades within their ranks in an attempt to cut the number of damaging blazes in the industry. Brigade members are taught to recognize fire hazards and how to cope with them in the quickest and most efficient manner. They are familiar with the proper use and care of all fire-fighting equipment on the premises and are trained in methods of evacuating personnel from a burning building by the quickest and safest escape route.

Properly trained employees and fire safety foresight combined may some day save your plant from complete destruction.

BOOM DOZER

(Continued from page 29)

tected by a heavy guard to prevent damage when passing over submerged "sinker" logs. These mechanical features gave the new water craft ample power and maneuverability for its man-sized job.

In action, the "five-by-five" bath-tub shaped boat belies its clumsy appearance. As the throttle motor roars into full life, the snub-nosed craft leaps into motion. It thrusts its steel-shod nose into a pocket of freshly dumped logs bobbing on the water. With a weaving motion it soon has the logs on their way to the booming pockets or to the sorting lanes leading to mill log hauls. In a shower of spray churned up by the thrashing propeller, the boat turns around within its own 16 foot length and darts back to corral a stray log. This water witch can back up as speedily as it goes forward, and literally waltzes on the waves as it jostles the logs into planned position.

Loggers were quick to see the craft's resemblance to their familiar bulldozer-equipped tractors, used to bring logs to truck landings and to build roads in rugged country. The steel-shod bow is literally the counterpart of a bulldozer blade and does the same husky work—on water. Hitched to a "dead-head" or "sinker" log common in log dumps, the boat performs a valuable pulling function in addition to its customery bulldozing action.

Since the first boat was manufactured in 1949, other units have been added to Weyerhaeuser's armada of water bulldozers. From Coos Bay, Oregon, north to Washington waters, the new water craft is doing a yeoman job of log herding. Safety engineers, too, like its efficient performance because the boat's use has eliminated another hazard in the logging industry, and made work safer for the millmen.

• Diehl's complete line of standard cutter heads includes a wide variety of vice grip heads. Diehl vice grip heads are easy to set up, give positive alignment, and have greatest gripping power for retention of dovetail cutters. A few of them are illustrated, both with and without Diehl's self centering sleeve. Diehl vice grip heads are safer and more satisfactory for heavy cuts and high frequency spindle speeds. Diehl heads are rugged . . . they *stay* on the job!

And if your job requires special heads, Diehl can design and build them. Diehl can meet *your* cutter requirements. Ask for our latest cutter catalog.

CUTTER DIVISION

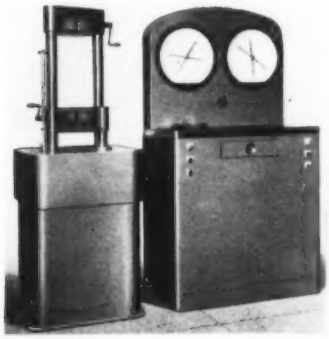
On the Banks of the Wabash

THE G.M. Diehl MACHINE WORKS, INC.

WABASH, INDIANA • U.S.A.

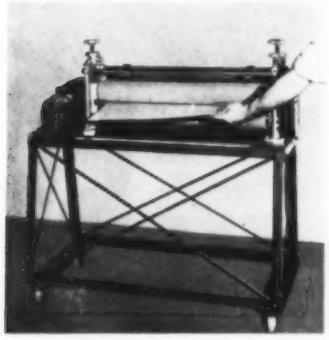
NEW

Products . . . . processes
equipment . . . . methods
materials & developments



Testing Machine

An improved, low-cost universal testing machine of 12,000 lb. capacity is announced by Baldwin-Lima-Hamilton Corporation, Dept. W, Philadelphia 42, Pa. The new Model 12-H, like the 60-H announced more than a year ago, has many of the features of larger Baldwin testing machines. One is that the hydraulic loading unit is separate from the indicating and control unit, which isolates recoil from breaking test specimens and permits adjusting maximum or lazy hands with minimum drag.



Rotary Press

High speed combining of glued materials up to ½" thick and 30 inches wide is the function of a new rotary press made by Potdevin Machine Co., Dept. W, 1285 38th Street, Brooklyn, N. Y. Suited for hand feeding flat sheets or set-up in a production line for combining webs of glued materials.

Resorcinol Type Wood Glue

Snyder Chemical Corporation of Dept. W, Bethel, Conn., announces increased facilities for production of SYNCO 128 series resins. The present critical shortages of resorcinol have greatly handicapped manufacturers of high-frequency, hot and cold-press plywood, prefabricated housing, freight cars, truck and station wagon bodies, boats, and other specialized wood-assembly products where waterproof glues meeting government specifications are required.

SYNCO 128 resins meet all of the performances of conventional resorcinal glues at lower cost and with greater production efficiency. Years of experience have proven this type of glue to be dependable, uniform and economical. These products are available in carload and tank car quantities.

GREMLINS IN YOUR GLUE ROOM?

Are the pixies spiking your glue pots? Are you experiencing unexplainable glue room problems? Send for "Casie" and "Resie", National Casein's famed glue gremlin exterminators.

Let a factory-trained National Casein glue specialist show you how "Casie" and "Resie" help keep glue room production up—production costs down.

Outline on your letterhead any adhesive problem you may have, and we'll send you a suggested solution FREE.

National Casein

No Glue Problem—Casein or Resin—is too Little, too Big, or too Tough!

605-19 West 80th Street, Chicago 20, Illinois • Broad & Fulton Sts., Riverton, N. J.

One Man Chain Saw

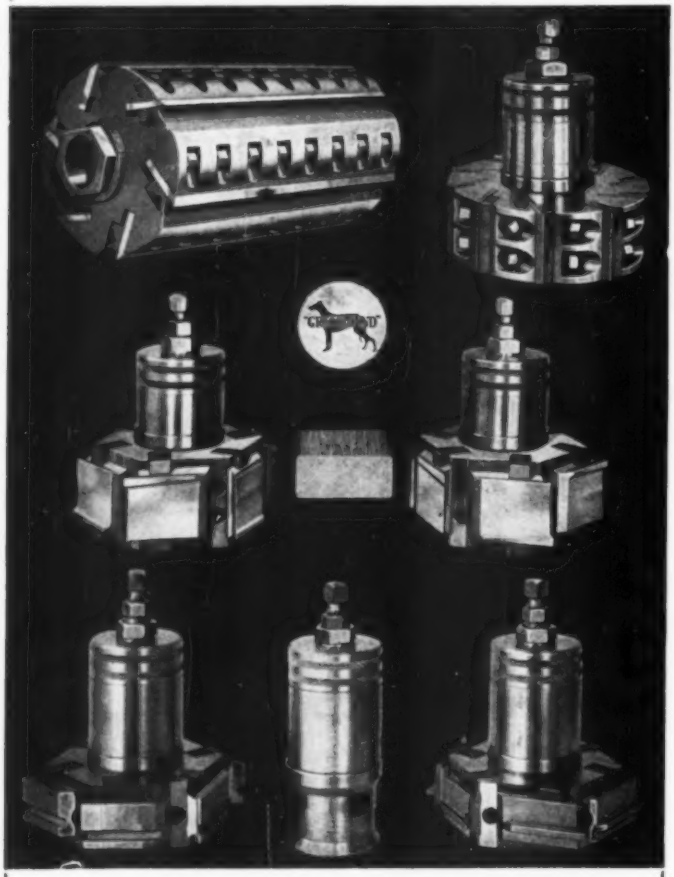
A new 16" lightweight one-man gas driven power chain saw weighing 27 lbs. has just been announced by Lombard Governor Corporation, Dept. W, Ashland, Massachusetts.

Features of the unit include an automatic oiler, automatic clutch and a recoil starter. Close to the ground cutting and handy two position handling make this an ideal saw for the wood lot.

New Fork-Lift

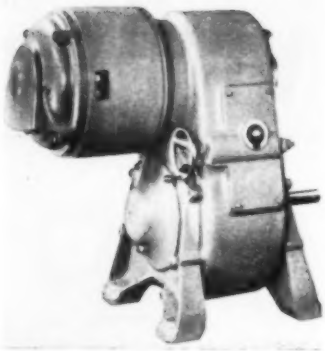
The battery-powered Trucloader is a 1000 lb. fork-lift with increased load capacity. The directional control lever automatically locks in neutral whenever the driver's seat is vacated. The truck also has a separate motor to provide power for the hydraulic pump. Details on this electric Trucloader on request from Clark Equipment Co., Industrial Truck Div., Dept. W, Battle Creek, Mich.

CUTTER HEADS - - - For Every Possible Requirement



Jones & Orth Cutter Head Co.

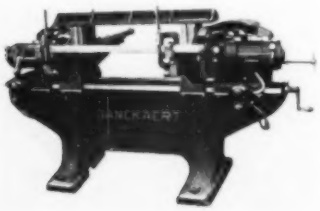
SEATTLE 14, WASHINGTON MEMPHIS 3, TENN.



New Speed-Trol Power Drive

New larger horsepower Speed-Trol Electric Power Drives have been added by Sterling Electric Motors, Inc., Dept. W, 5401 Anaheim-Telegraph Road, Los Angeles 22, Cal. They are designed to meet the growing demand for variable speed drives of 20 and 25 horsepower ratings in the chemical, metal working, food and plastic industries.

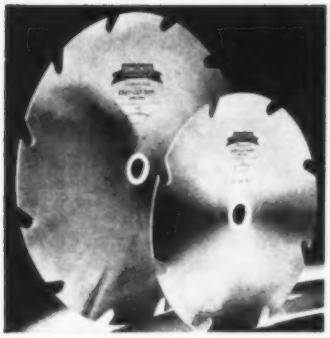
The unit illustrated is Sterling's Drip-Proof model which prevents liquids or any foreign material from falling into the motor. Outstanding features of this Sterling Speed-Trol are positive adjustment of pulleys, infinite speed variation and accurate control of speed under varying loads.



Grooving and Tenoning Machine

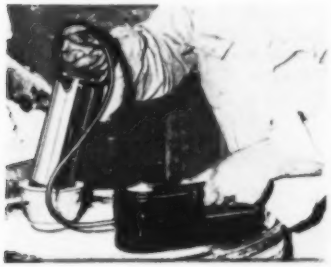
The new Danckaert grooving and tenoning machine is ideally suited for the mass production of all straight pieces of wood, within certain size limits, which must be cross cut and machined at both ends with precision, such as rails, frames, drawer fronts and sides, legs, floor blocks, and similar parts.

The machine consists basically of two sliding heads, each with a horizontal and vertical spindle, and a two-piece adjustable table, all set on a sturdy cast iron frame. For further information, write the Supreme Woodworking Machinery Co., Dept. W, 50-52 Howard Street, New York.



"Easy-Cut" Saw

The Simonds Saw and Steel Co., Fitchburg, Mass., has announced a new saw with a novel tooth design, based upon an entirely different conception of wood sawing. It has relatively few teeth and each tooth takes a limited "bite", and its design minimizes kickback, consumes less power and is quieter in operation. This new design "Easy-Cut" saw is best suited for ripping, but can also be used for rough cut-off and combination work on either table type or radial arm machines. It is made from 6 in. to 16 in. in diameter, with 8 or 12 teeth to the saw, either solid tooth or carbide tipped. Solid tooth "Easy-Cut" Saws are for hand feed only. Carbide Tipped "Easy-Cut" Saws are recommended for either hand or power feed. A descriptive folder with complete specifications is available by writing the Simonds Saw and Steel Co., Dept. W, Fitchburg, Mass.



Moisture Testing Instrument

The Moisture Register Company of Alhambra, California, has developed a moisture testing instrument, specifically designed for testing wood flour, wood shavings, wood chips, sawdust and similar by-products. Its high frequency power absorption gives it accurate testing to zero per cent moisture. The instrument has a penetration of three inches, is portable and simple to operate. Moisture content is determined by pressure of the gun electrode against a sample of the material, preferably placed in a small container such as a wide-necked glass jar. The instrument operates with a press of the thumb and one reading only is required to determine moisture content.

Band Saw Attachment

The capacity of the Delta standard 14-in. woodworking band saw normally 6 in. can be increased to 12 in. by using the No. 894 height attachment which consists of a cast-iron raising block and necessary fittings, according to the Delta Power Tool Division, Rockwell Manufacturing Company, Dept W., Milwaukee 1, Wisconsin. A longer hexagon guide post is furnished as part of the height attachment to provide a complete range of guide adjustments from minimum to maximum. Delta engineers point out that the blade guides, the upper arm, and other important parts of the band saw are designed for extreme rigidity for accurate cutting with the height attachment in place.

INCREASE PRODUCTION as much as 100%

Lift Installed at	Production Increase
Double Surfacers	40% to 75%
Rip Saws	30% to 60%
Cut-Off Saws	20% to 50%
Matchers and Edgers	20% to 40%
Stacking Kiln Trucks	50% to 100%
Box Car Loading Dock	25% to 50%

INSTALL LEITELT LUMBER LIFTS

A glance at the above figures, FURNISHED BY USERS, proves how Leitelt Lumber Lifts increase production.

You can get these profitable increases in production and save the labor costs of one or two men with a Leitelt Lumber Lift in your plant or yard. Leitelt Lumber Lifts are built in a full range of capacities for handling loads from three to thirty tons easily and safely.

Let Leitelt engineers solve your production problems. Write Today.

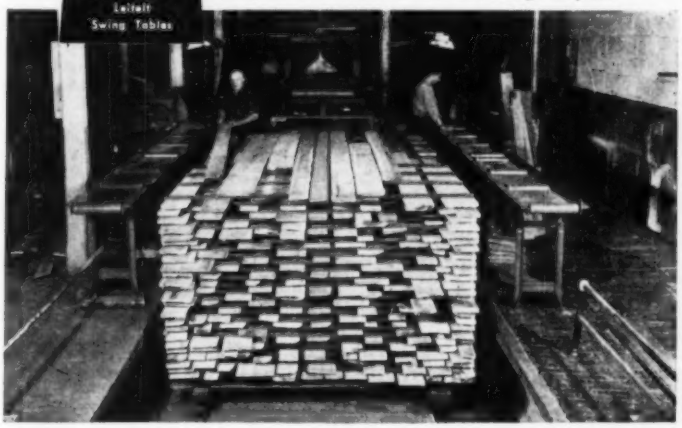
LEITELT IRON WORKS

"Pioneer Builders of Lumber Lift Equipment"

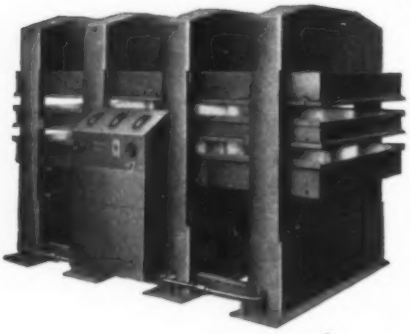
335 Mill St., Grand Rapids 2, Michigan

Also Manufacturers of Power Transfer Cars Car Pullers Power Driven Turntables Subcars and Leitelt Swing Tables

A typical modern installation showing a Leitelt Lumber Lift feeding two cut-off saws. This is how one of the largest table manufacturing plants in the country has increased their production at the vital point where material starts to flow through the plant.



the modern design



for increasing production of your veneering and laminating operations

The New

VB hot press

Check ALL these "Years Ahead" features that give you . . . . .

ACTUAL PRODUCTION ADVANTAGES

The modern design of the "VB" Press gives you savings in glue, veneer and labor. After-drying storage space is eliminated and the smoother surface of panels produced eliminates sanding and finishing costs. Compactly constructed, the "VB" Press requires no pit; giving the user a wide choice of placement for more efficient production.

Write for Illustrated Bulletin

"VB" Hydraulic Presses are available in single, two, three or four openings.

- ✻ ALL ENCLOSED FRAME
- ✻ ALL WELDED STEAM HEATED PLATENS
- ✻ PRE-ADJUSTED WORKING PRESSURE
- ✻ COMPACT HYDRAULIC SYSTEM
- ✻ AUTOMATIC CONTROL PANEL

V.B Berthelsen ENGINEERING WORKS, INC.

P. O. BOX 1423 • LOCKPORT ROAD • JOLIET, ILLINOIS

FAMOWOOD . . . *the AMAZING* . . .

ALL-PURPOSE PLASTIC for wood finishes!

Applies like putty . . . Sticks like glue!

FAMOWOOD is the answer...where wood finishes are important. Simple to use...efficient, lasting, time-saving, when filling wood cracks, gouges, nail and screw holes or correcting defects. Dries quickly, does not shrink. *Stays put* under adverse conditions. FAMOWOOD sands easily, does not gum up sander. *Takes spirit dye stains freely.* Waterproof and weatherproof when properly applied. Ready to use—*"right out of the can."* Fifteen matching wood colors ...with amazing matchless wood finishes.

USED BY . . . FURNITURE MFGS. • SASH AND DOOR MFGS. CABINET MAKERS • CONTRACTORS • BOAT BUILDERS • PAINTERS AIRCRAFT PLANTS • PATTERN SHOPS • HOME BUILDERS • ALL WOOD PRODUCTS

FAMOWOOD descriptive literature & price list on request. Distributor & Dealer inquiries invited, write Dept. WP-"

BEVERLY MANUFACTURING COMPANY 9118 SOUTH MAIN STREET LOS ANGELES 3, CALIF.

Manufacturers of...FAMOWOOD • FAMOGLAZE • FAMOSOLVENT

New Chain Saw

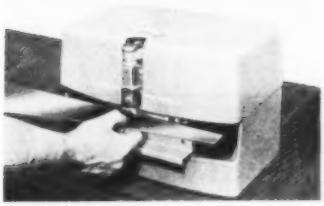
A new and advanced model power chain saw is being added to the long-established Titan chain saw line. The saw, known as the Titan Series 60, is designed for either one-man or two-man use with straight bar blades from 26 to 60 inches, or with a bow saw attachment of 19 inch capacity. Complete with a 26 inch bar and chain, the Titan Series 60 weighs 37 pounds. It is powered by a single cylinder, two cycle motor, and has all the Titan features, such as a fully automatic clutch, self-winding starter, dust and water-proof magneto, and a full 360-degree swivel. Further information is available from Titan Chain Saws, Inc., Dept. W., Seattle, Washington.

Clutch Coupling

The Mercury Clutch Division of Automatic Steel Products, Inc., has brought out the Series "E" Mercury Clutch Coupling. This is a complete unit consisting of a Series "E" Mercury Clutch with provision for mounting a standard flexible coupling between it and the electric motor. The new Mercury unit used in conjunction with a flexible coupling provides a satisfactory connection between the motor shaft and the driven shaft without the necessity of maintaining exact alignment. Bulletin 113 contains dimension and specification data on the new line which is now available through Mercury distributors. Write the manufacturer c/o Dept. W., Canton 6, Ohio.

New Trailer

Greater utility for fork-truck loading of freight is provided by the 1951 line of Fruehauf Stainless Steel trailers. Previously, stainless steel cross members were on 24-inch centers, but the 1951 models are on 18-in. centers. Other features include greater landing gear bracing; a 30-inch rear bumper ground clearance as greater protection against loading dock damage; twin tail and stop lights; and a newly developed sealed clearance light unit. For further information contact Fruehauf Trailer Co., Dept. W. 10940 Harper Ave., Detroit 32, Mich.



New Saw Setter

The new Foley Automatic Power Saw Setter for hand and band saws features an exclusive "twin hammer" action—one hammer for each side of the saw—with *both* hammers powered by a *single* spring. The twin hammers strike in opposite directions, so that both sides of the saw are set in one run through the machine, said to make the setting operation as speedy as it is accurate. The setter has simple, quick adjustments for size of teeth from 4 to 16 points per inch, for depth of set, and for firmly holding saws of different thickness between anvils. The Foley permits setting the saw either before or after filing as desired without dulling or breaking teeth. It sets either straight or crowned hand saws without removing handles. The entire unit has rugged, heavy duty construction, with take-up adjustments for maintained accuracy. Sold with a one year unconditional guarantee. For full information, write A. M. Foley Mfg. Co., Dept. W., Minneapolis 18, Minn.

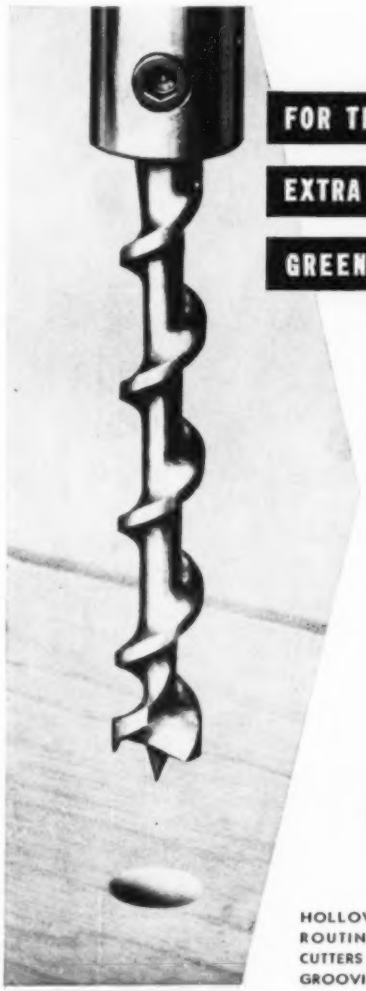
Lumber Handling Drive

A new electric drive for log and lumber handling, called Motocylinder, is available from Westinghouse Electric Corporation. It is designed for use in lumber mills, providing the reciprocating motion necessary to operate log haul unloaders, roll case unloaders, deck stop and loaders, pin stops, lift skids, chain transfers, hinged table transfers, log kickers, and hinged sweeps. Available in ratings of 1 to 20 hp with crank strokes of eight to 24 in., these Motocylinders provide a lifting force of 900 to 15,000 lb. at full stroke speed. The unit consists of a gearmotor with Class 3, heavy-duty gearing and a hoist-type Life-Line motor; a motor-operated Stearns brake; and, two type LS limit switches. Two cams mounted on the output-shaft crank-arm are arranged so that their position can be adjusted to obtain a crank rotation of either 180 or 360 degrees from the starting point. The entire assembly is mounted on a fabricated steel base. For further information, write Westinghouse Electric Corporation, Dept W. Box 2099, Pittsburgh 30, Pa.

Hardwoods Bulletin

A bulletin on the management of bottomland hardwoods, the first comprehensive publication on the subject, has been issued by the Southern Forest Experiment Station. The author is John A Putnam.

Over 30,000,000 acres, (about one-fifth of the South's total forest area) is in bottomland types. The greatest concentration is in the Mississippi Delta, but nearly every southern State has substantial acreages. While it is chiefly bottomland timber that enables the South to lead all other regions of the country in hardwood production, no guide to the management of these lands has hitherto been available. *Management of bottomland hardwoods* is Occasional Paper 116 of the Southern Forest Experiment Station, New Orleans, Louisiana. Copies may be had by writing to the Station.



FOR THE TOUGH JOBS...

EXTRA STURDY, SOLID-CENTER

GREENLEE MACHINE BITS

On these boring jobs where you need an unusually sturdy tool you'll find the GREENLEE Solid-Center Machine Bit an outstanding performer. Its husky stem, or solid center, is a round section continuing from point to shank and increases in size toward shank . . . allowing proper clearance, yet a heavier body where strain occurs. Its accurate cutting edges are of extension-lip pattern with two cutters. Write for facts. Greenlee Tool Co., 2111 Herbert Avenue, Rockford, Illinois.

TOOLS FOR CRAFTSMEN

GREENLEE

HOLLOW CHISELS • MACHINE BITS • DRILLS
ROUTING BITS • MULTI-SPUR BITS • PLUG
CUTTERS • COUNTERSINKS • MAKERS OF TECO
GROOVING TOOLS FOR TIMBER CONSTRUCTION

Glue Bulletin

Gluing problems in the production of plywood and furniture panels are analyzed in a new bulletin published by the Chemical Division of The Borden Company. Under the headings of spreading equipment, glue proportions, and maintenance of equipment, the bulletin discusses the various flaws traceable to improper or uneven glue spreads. Also included are tables of recommended glue spreads, surface grooving procedures, directions for flour extension of glue, and calculations to determine the amount of glue spread. Write for bulletin No. 85, The Borden Company, Chemical Division, Dept. W., 350 Madison Ave., New York 17, N. Y.

New Plastic Finish

A new pure, phenolic plastic finish for wood surfaces is announced by the Minnesota Platon Corp., Dept. W., Pipestone, Minn. Said to be alcohol proof, acid resistant, and fire resistant "Platon" can be applied by brush, sprayer, or by dipping. It is claimed to be quick drying and non chippable. For further information on this finish which is colored or colorless as desired contact the manufacturer.

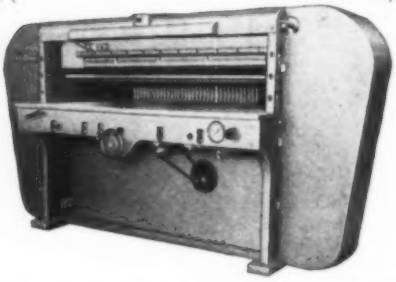
Now get

FAST ACCURATE CUTTING

Straight, Sharp Glue Joints • cross or with grain

with the NEW Francis

EST. 1880



The New Francis Hydraulic Precision Cutter incorporates many features discovered under practical, production procedures in the plants of America's leading veneer and furniture manufactures.

Designed, developed and engineered for durability, the Francis Cutter has been tested and proved on America's production lines. It is sturdily and rigidly constructed, accurate to 1/64 cuts. It delivers sharp, straight glue joints on veneers up to 90 inches in width and in bundles 7" thick.

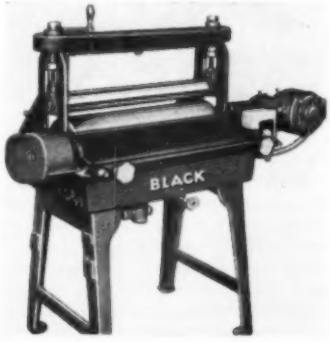
Its "easy-to-read" scale is illuminated by a flood light on the front cover. With three 20" long scales on the front section of the cutter table, a magnified depth scale of 1" wide by the depth of the machine, is graduated in 1/16", plus a master scale for positioning back feed bar, assures easy and accurate measurement for precision cutting.

The hold down bar is hydraulic pressure operated and is adjustable from a maximum of 7" to a minimum of ¾" wide clamping area. The back feed bar is electrically driven, but can be manually operated for fractional cuts.

Write or phone today for complete details and specifications.

CHAS. E. FRANCIS CO. — HUNTINGTON, INDIANA, U.S.A.

ALSO, MIXERS—SPREADERS AND COLD PLATE PRESSES



Glue Spreaders

Illustrated above is an arrangement of Black Brothers Floor Type Hand Feed Glue Spreaders which includes a precision ground upper friction feed roll running on roller bearings and having a vertical adjustment which holds the work firmly against the gluing roll insuring an even spread of glue. This is available on all Black Brothers 12, 18 and 24-in. solid roll spreaders of this series, and has a vertical adjustment of approximately 0-4-in. (more on special orders). They are furnished with a water jacket around the glue tank which may be used for steam, gas or electric heat for hot glues, or for the purpose of circulating cold water to reduce the temperature of cold glues. All solid roll spreaders of this type are now equipped with a power driven doctor roll type of scraper. Bar scrapers will continue to be furnished on the brush roll machines. For details write The Black Brothers Co., Inc., Dept. W., Mendota, Illinois.

Hand Truck

A dual-purpose hand truck with a built-in hydraulic hoist for lifting and stacking is currently being introduced by Clark-Hopkins Equipment Corp.

This hand Lift Stacker is of compact, sturdy construction, weighs 111 lbs, and has a capacity of 500 lbs. It lifts these loads to tail-gate height of 54 in. The platform is 22 in. by 19 in. for accommodating larger size packages. Bulletin No. P-1 describing the truck in detail is available by writing the firm c/o Dept. W., Philadelphia 23, Pa.

Names... Events

Deaths

JAMES E. JONES, who for a period of twenty-five years was Chief Inspector of the Southern Pine Association.

J. A. KAVANAGH, Vice President of the Lumberman's Credit Association, Inc., passed away July 14th.

New Jobs

GEORGE A. LEFEVRE of Philadelphia is appointed district representative for the New England and Middle Atlantic States, and WILLIAM O. ELLWOOD of Hamburg, N. Y. will serve the Buffalo area for the Temperature Controls Division, Perfex Corp., Milwaukee, Wis.

WALTER H. GAY of Memphis, Tenn. has been added to the Perkins Glue Co. sales and service staff for Louisiana, Arkansas, Mississippi, and Texas.

ROBERT W. HESS, one of the foremost authorities on woods, has joined the staff of The Mengel Co.

WILLIAM J. FINNORN, of New Orleans; ROBERT SWECKER, of Washington, D. C.; GERALD F. PRANGE, of Lancaster, Pa., have joined the laboratory staff of the Timber Engineering Co.

R. A. COLGAN, JR., resigns as head of National Lumber Manufacturers Association to manage 600,000 acres of forest property in California for the Shasta Forest Co., with headquarters at Redding.

RALPH BISHOP, has joined the sales staff of the Plywood-Denver Co., division of Plywood, Inc.

E. W. RISTAU has been appointed General Manager of the Ohlen-Bishop Mfg. Co. of Columbus, Ohio, a recently acquired subsidiary of the Rockwell Mfg. Co., Pittsburgh, Pa.

HENRY G. REENTS has been named superintendent of the plywood manufacturing department of The Long-Bell Lumber Co. at Weed, Cal. He takes over the duties of A. J. MYERS, who has been promoted to superintendent of plywood manufacture for the company in Longview, Wash.

MRS. LOUISE GAY DANTZLER was elected as a Director of the L. N. Dantzler Lumber Co., Perkinston, Miss. to succeed her late husband Lorenzo N. Dantzler. A. M. DANTZLER was elected President, GEORGE D. IZARD Vice-President, and A. F. DANTZLER Treasurer.

New officers of the F. Heinemann Saw Co., Canton, Ohio, are GEORGE E. HEINMANN, President, JOHN ELMES, formerly of the Ryman Engineering Co., Ellwood City, Pa., Vice President & General Manager; WILLIAM ELMES, Secretary; EVERETT T. FOSTER, General Sales Manager; William Heinemann has sold his interest in the company.

Promotions

R. A. HERTZLER, Chief of the Forest Utilization Service of the Southeastern Forest Experiment Station, is leaving that position by an appointment as Flood Control Survey Officer where he will serve as a member of the technical staff of the Secretary of Agriculture. In this assignment he will also serve with the Federal Inter-Agency River Basin Committee.

USED EQUIPMENT FOR SALE

There is always some WOOD and WOOD PRODUCTS reader interested in buying that equipment you've replaced. Why not convert it into cash with a Trading Post ad.

a New INVISIBLE METHOD OF WOOD FASTENING

BURR-LOCK

DOUBLES STRENGTH OF WOOD JOINTS

Unretouched X-ray photograph showing BURR in wood joint

an IMPORTANT ANNOUNCEMENT TO THE WOODWORKING INDUSTRY

Now you can build furniture, boxes, pallets, doors and a thousand other wood products stronger than ever. Just try **Burr-Lock** which is a multiple pronged steel ring that is INVISIBLE in the finished job. Use the rings with or without nails or glue . . . and when employed with nails or glue, you get what you always wanted—stronger joints.

EASY TO USE. Place the Burr between two pieces of wood, hard wood, soft wood or a combination (it makes no difference), and press or drive them together. That's all there is to it.

Burr-Lock is a new cost-saving invention designed after many years of research. If you are interested in an EXTRA SURE WAY to fasten wood parts securely, write us for Burr-Lock Folder No. 651.

U. S. PATENTS NO. 2558131-2558132
OTHER PATENTS PENDING

METAL Industries INCORPORATED
BURR-LOCK DIVISION
185 FOUR MILE RUN RD. • YOUNGSTOWN, OHIO

Speed Production
WITH
COLPRES 10 GLUE

With Colpres 10 a furniture manufacturer of cherry and maple colonial spool beds now glues in ½ work day what formerly required 24 hours and 2 shifts.

Hardwood or softwood parts glued with Colpres 10 are ready for machining in ten minutes.

Colpres 10 is a quick setting, two part, room temperature urea resin adhesive. It is water resistant, non-staining, and is unsurpassed for strength and its cold, quick setting characteristics.

Send us this ad clipped to your letterhead for copy of our technical bulletin and free sample of Colpres 10.

TIMELY SUGGESTION — Have our Laboratory test your glued wood parts for meeting Government and industrial specifications for strength, moisture resistance, etc.

TIMBER ENGINEERING CO.
1319 18th ST., N. W., WASHINGTON 6, D. C.

HARRY G. KELSEY, Assistant Vice-President of The Long-Bell Lumber Co. will be transferred from Longview, Wash. to Eugene, Oregon. He will acquaint himself with the operation of the Vaughn Division of the company prior to assuming the general managership on January 1, 1952.

ROY D. LAVOY has been promoted to the post of woods superintendent of the Oval Wood Dish Corporation, Tupper Lake, N. Y.

ROBERT S. BLACK assumed the offices of President and Treasurer, and JAMES S. CARROLL was elected to the offices of Vice-President and Secretary of The Black Brothers Company, Inc., Mendota, Ill.

Miscellaneous

TREE FARM DAY was celebrated for the tenth year recently in Montesano, Wash., which is the home town of the grandaddy of all the nation's 3,109 certified tree farms.

WABASH METAL PRODUCTS CO., Wabash, Ind., has acquired the exclusive manufacturing, distribution and sales rights of the Wabash Hydraulic Presses formerly manufactured by Laboratory Specialties, Inc.

DIAMOND MATCH CO., New York, N. Y., has acquired the Talcott Lumber Co. of Salinas, Cal., as announced

Do You Need . . .

Kiln-dried Cores . . . top quality . . . any species . . Made to your exact specifications.

OR . . .

7/16" Oak Drawer Sides and Backs . . . ready to assemble . . . finest workmanship.

Wire Us Today . . . insure your present and future needs on these and others with

L. N. BAGNAL
P. O. Box 2896 Tel. 8115
Winston-Salem 1, N. C.

WOOD PRODUCTS COMPLETELY MACHINED

SOUTHERN HARDWOOD—YELLOW PINE AND CYPRESS LUMBER
PLYWOOD
FLOORING
HANDLES &
DOWELS

Your Inquiries Invited

ANDERSON-TULLY COMPANY
MEMPHIS 10, TENN.

JOE VIRGESON
LUMBER CO., INC.
COLUMBIA, SOUTH CAROLINA
P. O. Box 744, Phones 5168-5166

TRAINED LUMBER ENGINEERS TO HELP SOLVE YOUR LUMBER PROBLEMS

Virgeson representatives are lumber engineers, experienced in helping you adapt the right lumber to the right use. Contact us for the utmost on your lumber needs.

Yellow Pine
Cypress
Southern and Appalachian Hardwoods
Walnut
Mahogany
Glued up and Solid Cut-to-Size Dimension

West Coast Products

Choice Quality Lumber from Modern Mills

G.R.D. ... your most RELIABLE Source for DOWELS

Yes... look to G.R.D. as a *reliable* source for dowels, plugs, buttons, drawer stops, table pins; precision-made and absolutely uniform. Quick delivery, too — your complete order is on its way promptly after receipt of your call or written request. All popular sizes are carried in stock.

G.R.D.'s entire line is competitively priced.

Write for information and prices on small wood parts, profile and variety lathe turnings, and metal corner braces. *Phone 3-2814.*

GRAND RAPIDS DOWEL WORKS
711 Burton St., S.W., Grand Rapids 9, Mich.

CLAMP NAILS

100% HOLDING POWER

—uniformly distributed thru-out the entire joint and permanently there as long as the wood lasts, is the outstanding, yet conservative, claim of the CLAMP NAIL. Its equal width flanges serves to re-enforce the grip produced by its tapered shape as it is driven in—wide end first. No more profit loss heartaches from poorly produced and atmospherically affected joints, split wood or idle time. Don't wait—try CLAMP NAILS in your own production — *Now!* There is only one Genuine CLAMP NAIL.

Write today for CLAMP NAIL Bulletin No. 1

CLAMP NAIL COMPANY

4546 PALMER STREET • CHICAGO 39, ILLINOIS

A REVOLUTIONARY DEVELOPMENT

VIBRA-FREE* CARBIDE TIPPED MEYCO SAWS

You will be interested in this radically new development IF your carbide tipped saws sound like a police siren; IF they develop a "snaky" cut after short usage; IF they dull fast because carbide tips become chipped.

MEYCO VIBRA-FREE* saws embody a new principle in saw design, a new control over vibration by the use of sound absorbing dampers, which eliminate excessive vibration, excessive noise . . . produce smoother cuts, longer life for carbide tips. You get MORE cuts between sharpenings and operators LIKE to use Vibra-Free* blades. Investigate this revolutionary development TODAY. Write for full information and price list.

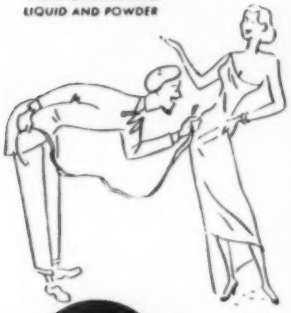
*T. M. Reg. U. S. Pat. Off.

W. F. MEYERS CO., INC., BEDFORD, INDIANA

Custom Processed for the WOOD-WORKING industry

Synthetic RESINS

UREA
PHENOLIC
RESORCINOL
LIQUID AND POWDER



SYNVAROL WR—liquid resin with various solid content—Non-staining, excellent water resistance and highly extendable. For hot and cold press.
SYNVARITE US, a neat powder—Non-staining, excellent water resistance and highly extendable. For hot and cold press. (Variety of hardeners for all working requirements and non-crazing quality)
SYNVARITE P, Powder Phenolic Resin—For exterior grade plywood, a waterproof bond and short curing cycles.
SYNVAREN, Phenol and Resorcinol Resins—for room and intermediate temperature cures, waterproof bond, excellent for table

SYNVAR RESINS

SYNVAR VE-50, Polyvinyl-Acetate Glue—for edge and joint gluing.

Manufacturers of Fine Resins Since 1939.

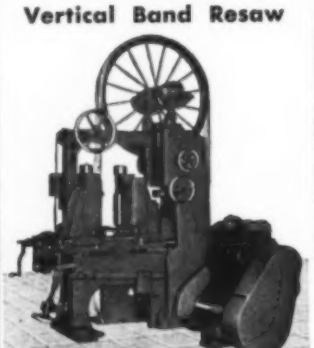
SYNVAR CORPORATION
Wilmington 99, Delaware

The dealer may never see the log itself when he orders a shipment of lumber, but he can be sure of the finest when it comes from W.T. Smith . . . . . of pine selectively cut, properly dried and precisely handled. Such are the benefits you will receive from W.T. Smith's 67 years of experience and skill in producing better pine and hardwoods.

Selective Cutting Assures Permanent Supply

W. T. SMITH LUMBER CO.
CHAPMAN, ALABAMA
67 YEARS OF MANUFACTURING YELLOW PINE AND HARDWOODS

McDonough 44"
Vertical Band Resaw



New Model! New Features!

- √ Variable gear drive for feed rollers. 40-225 lin. ft. per min.
- √ Heavier wheels.
- √ Larger shafts.
- √ Timken Bearings.

McDONOUGH
MANUFACTURING CO.
Incorporated 1888
Eau Claire, Wisconsin
World's Largest Producer of Band Resaws

CHICKASAW
BRAND
Oak Flooring

SINCE 1905

UNFINISHED ★ PRE-FINISHED
Treads ★ Risers ★ Thresholds
Consult us about
Semi-Finished Oak
Furniture Dimension Stock
Straight or Mixed Carloads

MEMPHIS HARDWOOD FLOORING CO.
1591 THOMAS STREET
MEMPHIS, TENN.

by Joseph E. Duffey, Vice-President.

STROMBERG-CARLSON CO. resumed its production of television and radio receivers July 16, following the two-week vacation and inventory shut-down.

AMERICAN WHEELABRATOR & EQUIPMENT CORP., Mishawaka, Ind., has reorganized and expanded its sales staff at the executive level, according to Otto A. Pfaff, President. L. L. Andrus is promoted to Vice-President and Executive Head of the Dust & Fume Division. John A. Silver has been appointed Director of Sales. He was formerly with Lester and Silver, management and sales consultants of New York and Philadelphia. E. B. Rich, Chicago representative of the Company, becomes General Sales Manager. A. E. Lenhard, Advertising and Sales Promotion Manager, assumes new responsibilities. S. S. Deputy, Sales Manager, will work closely with the General Sales Manager on special assignments. Bernard Lester, of Lester and Silver, will continue as a sales management consultant to the Sales Division and to general management.

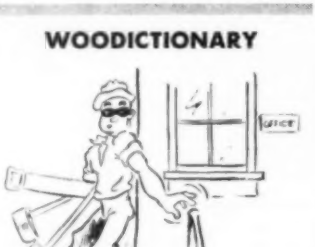
WESTINGHOUSE ELECTRIC CORP. recently acquired the common capital stock of the Plywoods Plastics Corp. of Hamilton, S. C.

A FIVE DAY COURSE in statistical quality control as applied to wood products manufacture will be conducted in the School of Forestry at the North Carolina State College, Raleigh, N. C., September 10-14.

PLANT MAINTENANCE CONFERENCE is to be held simultaneously with the Plant Maintenance Show at Convention Hall, Philadelphia, Pa., January 14-17, 1952, it was announced by Clapp & Poliak, Inc., New York, N. Y., the exposition management.

RICKINI LUMBER PLANT suffered a $200,000 loss by fire at its Eugene, Oregon operation. Edward Rickard is is the owner.

WOODICTIONARY



OFF BEARER

Man who takes stock away from the machine. A trainee or unskilled labor.
Dwg.—Courtesy So. Pine Assoc.

All Northern Hardwoods
Lumber
Veneers
Plywoods

Phone, Wire or Write
NORTHERN HARDWOOD VENEERS, Inc.
Butternut • Wisconsin

HERMANCE NO. 60
HIGHSPEED BALL BEARING MOULDER

A modern machine for the Rapid and Accurate production of Small Mouldings or for four side planing. Ideal for detail work. Quick to set up. High spindle speed, 5400 RPM, means fine one-knife finish at fast feeds. Handles stock from the smallest to 6" wide and 3" thick; bed drops 16" for running wide stock on edge. For fast feeds it can be furnished with four knife heads, knife jointers, electric grinder and automatic hopper feed. The low initial cost and many advantages of this machine will appeal to you.

Write for Detailed Bulletin

HERMANCE
MACHINE COMPANY
Williamsport, Pa.

SALUTING

(Continued from page 23)

WEYERHAEUSER

ber Company in 1933, and in 1947, he was elected president.

Phil is probably proudest of all his company's waste-free manufacturing operations and fast-spreading forestry program, which received national recognition this year through the tenth anniversary dedication of Weyerhaeuser's Clemons Tree Farm in Washington, the first in the nation.

Carl Allison Rishell, Director of Research for the National Lumber Manufacturers Association and its affiliated organization, the Timber Engineering Company, Washington, D. C., was born February 27, 1898 in Emporium, Pennsylvania, served with the Navy in World War I, and received his forestry degree from Pennsylvania State College in 1923.

McCLURE

Memphis community activities were sparked by his endeavors as he help found and served as an officer of the Rotary Club, and Community Fund.

The John W. McClure School, NHLA training school in lumber inspection, is a fitting tribute to Mr. McClure who has inspired the entire industry to achieve a better understanding of hardwoods.

RISHELL

new uses of lumber and other wood products.

Mr. Rishell is a member of the Society of American Foresters, a fellow in the American Institute of Chemists, an original Director of the Forest Products Research Society, member of the Washington Engineer's Club, a U.S. Power Squadron member, vice chairman for the Forest Products Advisory Committee of the National Security and Industrial Council and chairman of its Executive Committee.

PLYWOOD WANTED

Perhaps you are a toy manufacturer or a user of small pieces of plywood. Someone has exactly what you need. A Trading Post ad may help you to reduce your manufacturing costs.

Reliable and Recommended Sources For

DIMENSION STOCK

SOLID • GLUED UP • MACHINED TO SPECIFICATIONS

SOLID & GLUED DIMENSION

SEMI OR FULLY MACHINED

Our connections have open time available for carlots: Glued Blanks, Mouldings or Cores—from 4/4 Maple. Oak, Gum, Beech, Elm or Pecan. Also 5/16 Oak or Gum Drawer Sides and Backs.

CONTACT GEORGE MABREY

Fabricated Lumber Products Co.

101 Park Avenue New York 17-D, N. Y.

PLYWOOD DIMENSION

•

SOUTHERN HARDWOODS

⅜-in. and Thicker—Fully machined, circled, bored, shaped, etc.

•

WILLIAM B. COGGIN, INC.

80 E. Jackson Blvd. Chicago 4, Illinois

Telephone HArrison 7-3555

MAINTAINED PRODUCTION IS ONE THING, PROFITS ANOTHER . . .

Our Planning Department can help you solve problems of production and quality control, that effect your cost of manufacturing.

PLYWOOD DIMENSION FIR—GUM—HARDWOOD MACHINED TO YOUR SPECIFICATIONS

Send blue print or drawing and specifications for quotations

Main Office: Waterloo, Ind. Phone 3265

R. P. WAKEFIELD COMPANY

Maple & Pine Streets — Waterloo, Indiana

Branch: Detroit Office Phone Trintity 3-3208

Here's the place to list your Dimension Stock and sell it quickly. Send us your copy and you will be surprised at the very nominal cost of this space.

MAPLE BIRCH BEECH

Kiln Dried Dimension Stock

Plain S2S—Machined—Turned

Solid and Glued Up

MICHIGAN DIMENSION CO.

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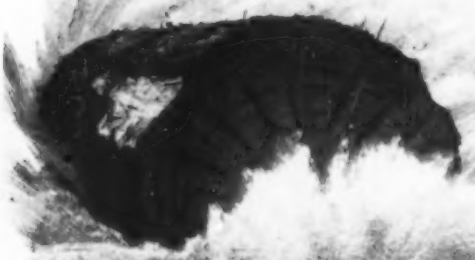

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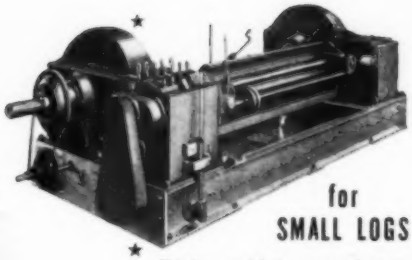

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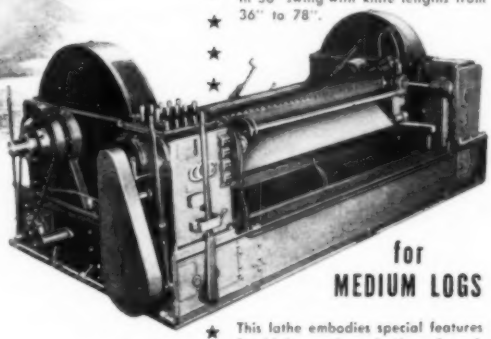

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BARREL & BOX & PACKAGES

Barrel and Box and Packages, Vol. 56, No. 8, included as a separate section of Wood combined with Wood Products, is devoted to serving the best interests of the wood container industry.

Wood Packing Pays

56 YEARS OF CONTINUOUS SERVICE TO THE WOOD CONTAINER INDUSTRY

Man-Time-Material Economies Help Cut Shipping Costs

Revision of Packing Room Procedure Contributes to National Defense

In these days of national defense preparations, every man-hour saved in factory operations is not only a production economy, but also a vital contribution to the over-all defense program.

When this saving of man-time accompanies a saving of raw materials, factory space, and dollars and cents in production costs, the contribution to national defense is of still greater importance.

The American Blower Corp. factory at Columbus, Ohio, entered the national defense period with a full fledged revision of packing room operations for three of its principal products. Those revisions have brought man-time savings of up to almost 80 percent, over-all packing cost economies ranging up to more than 50 percent, and appreciable economies in the use of vitally important wood.

These impressive man-time, packing cost, and raw materials economies resulted directly from the company's discontinuance of its own crate making department late in 1949 and its conversion to the use of prefabricated, scientifically engineered wirebound crates for its vertical heaters, Ventura fans, and utility ventilating fans.

Actual Shipping Cost Savings

A few typical concrete examples of the economies that resulted from the conversion are shown by the following before and after figures, respectively, for shipping weights, man-time required to pack for shipment, and over-all packing costs in the order named:

Model No. 1. vertical Venturafin heater– 214 pounds vs. 170 pounds; $5.43 vs. $3.51; 44 man-minutes vs. 12 man-minutes.

Model No. 2. vertical Venturafin heater–364 pounds vs. 285 pounds; $8.67 vs. $4.41; 70 man-minutes vs.

(Continued on page 84)

Ventura fan being placed in preformed wirebound shipping crate. This method eliminates hidden and shipping damage.

Two pieces of prefabricated wooden special interior packing nailed to cleats of crate suspends unit during shipment.

The sturdy, engineered top of the crate is padded with a protective material to prevent the finish of the fan from being marred.

Lumber Conservation Vital In Container Production

Several Ways to Economic Utilization of Crate Material Include: Proper Use of Species and Grades, Specification Limitations, and the Development of New Sheathed and Unsheathed Crates. Presented at '51 National FPRS meet.

By J. A. SARGEANT

Engineer Research and Development Laboratories, Fort Belvoir, Va.

A survey of military lumber usage by the Corps of Engineers, Department of the Army, initiated action in the interest of conservation and economy within the Defense Program. The prime purpose of the survey is to determine quantity used, purpose for which used, and species, grades and sizes requisitioned by all Department of Defense establishments which use lumber.

A further result hoped for from the survey is a broader use of the various wood species, use of lowest grades consistent with end requirements, and the use of minimum and random sizes rather than fixed specific lengths and widths.

Species, Grades and Sizes for Container Production

Measures should be taken to insure that requisitions for lumber procurement set up requirements with respect to species, grades, and sizes that are as broad as are permissible under the specifications covering the end use of the lumber. As an example, if a container specification permits the use of lumber from several wood groups, the requisition should not limit the requirements to a single species, or two or three selected species, with such selection based on personal prejudices or preferences. This also applies to grades and sizes. Acceptance of the broadest possible selection of species, grades, and sizes assists the procurement office in filling the requisition most advantageously and economically under the current market conditions.

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means of conservation is to so design the end item or consider the end usage of the wood or lumber that excessive use or wastage is eliminated.

Care in Design

Probably the most effective means of achieving economy and conservation of lumber lies in applying intelligent engineering in design. There is much more to development of standard designs of wood shipping containers than having a draftsman draw some nice looking straight lines with a few dimensions around them and casual reference to "nominal" sizes. A lot of study and work is necessary, or should be. It is here that the packaging laboratories of the various Military Services, are able to contribute answers to some of the innumerable factors involved in military supply which ultimately effects container requirements.

Comparatively few wooden containers, for military use, are procured and stocked in a standard range of sizes and types for general application to the packaging of any variety of supply items.

Practically all packaging of military supplies and equipment is specification packaging. This means that some packaging laboratory, military depot or manufacturer with military agency approval, has studied the item involved and selected the particular container needed to meet all pertinent conditions. Safe arrival in usable condition is a paramount military requirement but it is no reason why waste cannot be avoided.

A specification should not be looked upon as a necessary evil but rather as a tool required to produce a specific result; and, it is through specification requirements that most of the efforts toward conservation and economy can be put into effect.

In order to show action being taken in the Military Establishment and having a bearing on conservation of lumber, it is necessary to mention certain specifications common to all the services and currently in use covering the constructive requirements for several general purpose types of boxes and crates. These are well known to various suppliers of military supplies and equipment as well as to the box and crate industry.

JAN-P-105—Wood-cleated Plywood Boxes.
JAN-P-106—Nailed Wood Boxes.
JAN-P-107—Wirebound Wood Boxes.
JAN-P-104—Nailed Wood Sheathed Crates.
JAN-P-132—Nailed Wood Unsheathed Crates.

Now specifications, again like tools, must be maintained, kept sharp for effective use by revision to meet changing needs and conditions, new experience, data, or improvements in design. The specifications listed above are currently in such a process of improvement. The proposed changes and reasons therefore will be explained as of probable interest to those having contact with military supply.

Specification JAN-P-105, covering construction of Wood-Cleated Plywood Boxes, in itself is not being revised but will be benefited by revision now in process of Specification JAN-P-139 which covers Container Grade Plywood. The latter specification is being so changed that veneer requirements will more nearly conform to established commercial grades and thus avoid the need for a special grading to meet specification requirements.

Specification JAN-P-107, which covers construction of Wirebound Wood Boxes, is currently in process of revision by the Quartermaster Corps custodian to incorporate improvements

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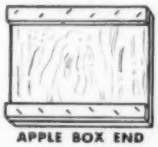
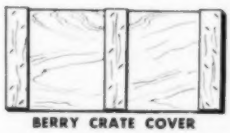

APPLE BOX END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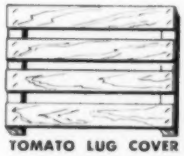
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proposed by the Wirebound Box Manufacturers' Association.

Specification JAN-P-106, for Nailed Wood Boxes, is currently in process of amendment to incorporate improvements and expansion of its field of use as explained later.

General Purpose Crates

The Corps of Engineers had determined that certain inadequacies existed in the design of nailed wood boxes for contents, particularly of concentrated weight, or of large size, in the weight range between 500 and 1,000 pounds. Because of these deficiencies, such items were being packed in nailed wood sheathed crates (Specification JAN-P-104). A further determination had been made that the design requirements of the latter specification for weight of contents under 2,500 pounds were excessive and wasteful of lumber. As a result of these determinations, a project was set up to establish design requirements for the reinforcement of nailed wood boxes in the 500 to 1,000 pound range and for an intermediate nailed wood sheathed crate in the 500 to 3,000 pound range. This project has been completed.

The changes proposed in Specification JAN-P-106, resulting from this project, are specific requirements for the use under certain conditions of heavier bottom or floor boards and of additional battens and skids under items of concentrated weight which require bolting down or anchoring.

Specification JAN-P-104 covering Nailed Wood Sheathed Crates is also in process of revision. Changes as proposed by other Services and by the Forest Products Laboratory provide for a reduction in roof load capacity from 175 pounds per square foot of roof area to 100 pounds per square foot with a resultant reduction in the size and spacing of some frame members. Provision is also being made for fabrication of this type of crate as a demountable container for reuse. Where such reuse is practicable, a considerable saving in lumber should result.

The use of open crates with or without liners can provide an acceptable container in many instances and also produce large economies in lumber consumption.

Specification JAN-P-132 for open crates up to 2,500 pounds capacity is currently under study for increase in its range of usefulness in addition to the provision of more specific design details.

Drafts of a new specification for open crates of larger capacity are in process of acceptance by the Military Establishment. This includes design requirements developed by the Forest Products Laboratory providing for contents of weights in excess of 2,500 pounds which is the top limit for Specification JAN-P-132 crates. Provision is made for two designs in separate weight ranges and for both nailed or demountable construction. The crate of lower capacity, 2,500 to 10,000 pounds, is a variation of the standard crate design in Specification JAN-P-104. The design merely removes those portions of the sheathing which are not used to interlock frame members and adds plywood gussets at several other weak points. The crate design for larger capacity, 2,500 to 30,000 pounds, is a radical change in design from any previous military crate. The side panels are formed by horizontal members and two sets of diagonals. The diagonals are placed on either side of the horizontal frame members and in opposite directions, forming a strong structure capable of carrying the required superimposed load. The base is substantially constructed; however, floor members are replaced with diagonals when possible. The top and ends are double

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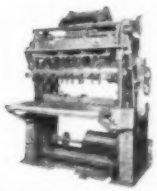

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This open-back nailing machine is especially designed to provide the utmost versatility both in size and nailing patterns. Three standard models accommodate nailing patterns up to 42"x24", 60"x24" and 74"x24". Special custom adaptations are available on order. Standard machine selects and drives up to 24 nails per stroke; 87 strokes per minute; drives all types of nails from 3d to 10d — common, smooth box, cement-coated box, copper, aluminum, drive screw ring shank. Design of jigs and nailing tables are custom-engineered to specific requirements of jobs to be done.

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NM-18

diagonal or "X" panels framed on 4 by 4 timbers.

The design has many good features as it has made it possible to use open crates on heavy items of equipment which were not so provided before.

Salvage of Crate Material

The usefulness of crates does not end when the contents are removed. Combat construction batallions have used the larger containers for construction purposes. The heavy bases have been used for bridges, shoring of damaged bridge structures, and shelters.

During World War II requests were made that more heavy timbers be used in large crate buses so that they would be available in front line areas. The reasoning was quite sound because the space required for a crate was not increased by attaching more skids, shipping space was at a premium and lumber storage was concentrated too far from the combat areas for use; therefore, this means of supply was very logical.

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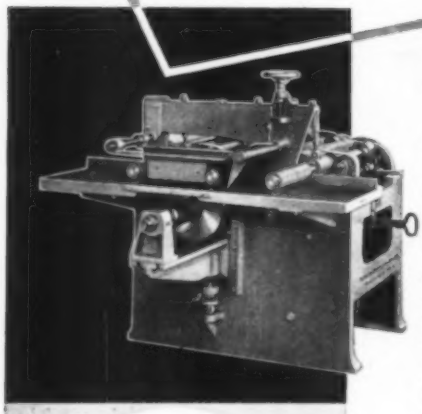

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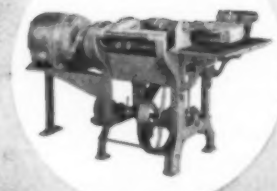
For complete specifications, write for Bulletin No. 441.



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GANG RIP SAW NO. 440

Lighter duty than the No. 441, this machine for sawing cleats can also be used for many other purposes. *Bulletin No. 440 contains the complete data.*

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Wood

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Logs of the Douglas fir region of Western Washington, Oregon and Northern California produce about 15.5 percent boards, 54.5 percent dimension, 9.9 percent planks and timbers, 17.8 percent clears and industrial grades and 2.3 percent other grades.

?

26.4 percent of the total wood volumes used in Washington pulp mills in 1948 came from the salvage of wood from the forests and sawmills, that at one time was wasted.

?

There were 152,626 snags felled on West Coast tree farms in 1950 for fire hazard reduction at an average cost of $1.33.

?

In 1949 the Federal Government was employing an average of one trained forester for every 65,000 acres of commercial forest land under federal administration. Private forest lands averaged one trained forester for every 36,000 acres.

?

Scandinavian countries are harvesting their fourth and fifth crops of mature forest trees from their timber lands. The West Coast lumber industry's principal harvest is still virgin timber after nearly 125 years.

?

Forest area burned in the United States during 1949 was the lowest in history.

?

In the Douglas fir region it may take 80 to 100 years to grow a crop of mature saw timber and 60 years to grow mature pulp wood.

?

Forest conservation is defined as wise use of the forest for the greatest good of the greatest number of people for the longest time. It does not imply stopping the harvesting of timber, nor does it recognize unnecessary waste.

?

Each year about 1,100,000 people earn their living as employees of the American lumber industry and wood furniture and fixtures industries.

WOODICTIONARY

LUMBER INSPECTOR

A man who examines and grades lumber according to its species, size, condition, and ultimate usage. See page 30.

Dwg.—Courtesy So. Pine Assoc.

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CRAWFORDSVILLE, INDIANA
JACKSONVILLE, FLORIDA

Left: Vertical fin heater being lowered by a hoist to the waiting brace of the crate. Right: Unit is securely nestled on the scientifically engineered base of its shipping crate.

(Continued from page 77)

15 man-minutes.

Model No. 3. vertical Venturafin heater—364 pounds vs. 285 pounds; $8.59 vs. $4.01; 67 man-minutes vs. 15 man-minutes.

Model No. 1. horizontal Venturafin heater—214 pounds vs. 170 pounds; $5.43 vs. $3.57; 70 man-minutes vs. 15 man-minutes.

Model No. 3. utility set—403 pounds vs. 300 pounds; $5.40 vs. $3.82; 79 man-minutes vs. 23 man-minutes.

Model No. 5. utility set—220 pounds vs. 155 pounds; $4.91 vs. $3.41; 67 man-minutes vs. 13 man-minutes.

Model No. A Ventura fan—78 pounds vs. 65 pounds; $3.71 vs. $2.31; 53 man-minutes vs. 17 man-minutes.

Model No. D Ventura fan—273 pounds vs. 195 pounds; $8.87 vs. $5.88; 71 man-minutes vs. 21 man-minutes.

Shipping Damage Reduced

In converting to the use of wirebound crates for shipping Ventura fans, the company actually increased its shipping container cost by almost 100 percent, but achieved appreciable man-time economies and, of greatest importance, elimination of costly shipping damage.

A shipment of 27 cartoned Ventura fans from Columbus to Chicago was the convincer for the conversion to wirebound crates for this unit months after the Venturafin heaters and the utility sets were being packed in wirebound containers. The shipment of 27 units arrived in Chicago with 26 of the units suffering hidden damage that was discovered only upon delivery of the units to customers!

With Ventura fans selling at upwards of $100, this was a mighty costly lesson in undependable packing.

One of the greatest economies resulting from the conversion to wirebound crates for packing utility sets results from the fact that only two different crate bases need be kept in stock, one with eight pre-drilled holes for the three smaller models and two with six pre-drilled holes for the larger models of sets.

Formerly, each base made by the American Blower Corp. crate department had to be individually drilled to fit the unit. This resulted in a disproportionate amount of man-time being expended upon preparing the bases alone. Now, however, a unit is bolted to the base of its crate in a matter of almost seconds because of the holes pre-drilled at the wirebound crate factory.

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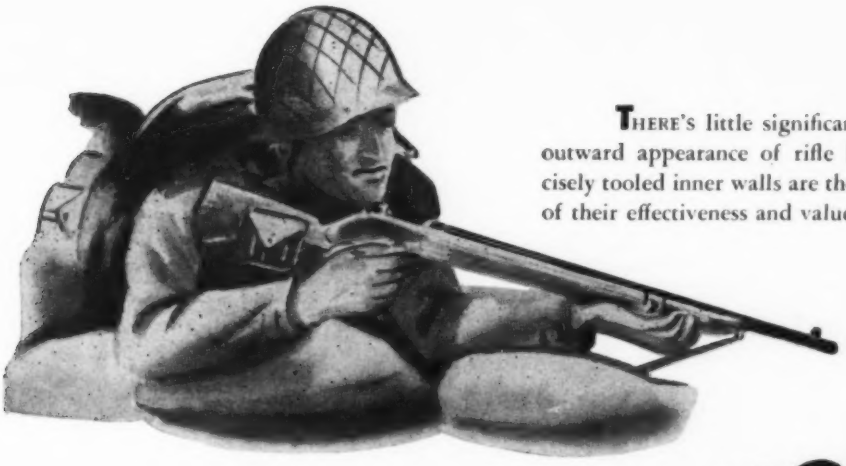

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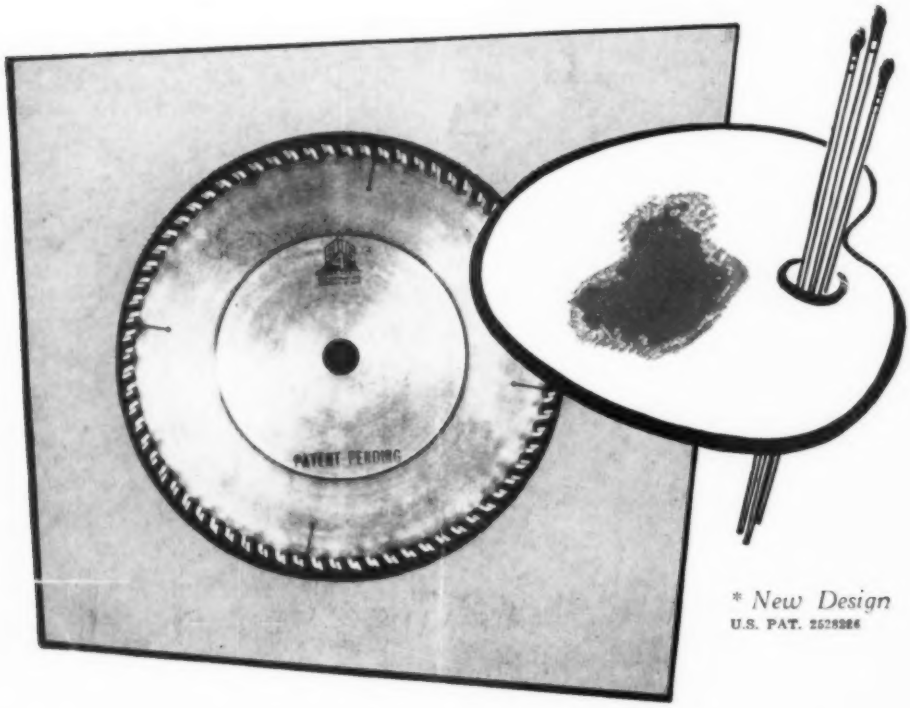

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